PPD/400(S)/5/7/10-2026

TARIKH IKLAN : 10.08.2026

SEBUTHARGA :

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS

G2

TARIKH TAKLIMAT & LAWATAN TAPAK	**: 17.08.2026(ISNIN)**
MASA	**: 10.00 PAGI**
TARIKH TUTUP	**: 24.08.2026 (ISNIN)**
MASA	**: 12.00 TENGAHARI**

PEN. JURUTERA YANG MENGAWASI KERJA :
AZIAH BINTI MUHAMAD

HARGA NASKAH : PERCUMA

**** NOTA :** Salinan dokumen-dokumen yang dinyatakan dalam senarai semak hendaklah disertakan bersama semasa penyerahan Borang Sebutharga.*

COP SYARIKAT :

ARAHAN KEPADA PENYEBUTHARGA

1. HAK KERAJAAN UNTUK MENERIMA/ MENOLAK SEBUT HARGA

Kerajaan adalah tidak terikat untuk menerima sebut harga yang terendah atau mana-mana sebut harga atau memberi apa-apa sebab di atas penolakan sesuatu sebut harga. Keputusan Jawatankuasa Sebut Harga adalah muktamad.

2. CARA-CARA MELENGKAPKAN DOKUMEN SEBUT HARGA

2.1 Penyediaan Sebut Harga

Kontraktor dikehendaki mengisi dengan dakwat hitam segala maklumat berikut dengan sepenuhnya:-

2.1.1 Harga dan tandatangan Kontraktor di Ringkasan Sebut Harga,
2.1.2 Harga, tempoh dan tandatangan dalam Borang Sebut Harga,
2.1.3 Senarai Kerja Dalam Tangan,
2.1.4 Senarai Pengalaman Kerja
2.1.5 Jadual Kadar Harga (jika ada),
2.1.6 Butir-butir Spesifikasi (jika ada),
2.1.7 Surat Akuan Pembida
2.1.8 Maklumat kemampuan kewangan dalam bentuk Penyata Akaun Bank yang disahkan oleh Pengurus Cawangan Bank berkenaan untuk 3 bulan yang terakhir, Deposit Tetap, baki nilai Kemudahan Kredit dan nilai Kemudahan Kredit yang layak / akan diperolehi oleh Penyebut Harga daripada Institusi Kewangan.

2.1.9 Jika berlaku kesilapan dalam mengisi maklumat-maklumat di atas Penyebut Harga hendaklah menandatangani ringkas semua pembetulan.

2.1.10 Kegagalan mengisi / menandatangani Borang Sebut Harga akan mengakibatkan Sebut Harga ditolak.

2.1.11 Sekiranya terdapat percanggahan di antara maklumat yang dinyatakan dalam Ringkasan Sebut Harga dan Borang Sebut Harga, maklumat di dalam Borang Sebut Harga diberi keutamaan.

2.1.12 Sekiranya dokumen Sebut Harga disediakan dalam bentuk *softcopy* (berbentuk CD), Penyebut Harga hendaklah mengemukakan Dokumen Sebut Harga dalam bentuk *softcopy* dan *hardcopy*. Sekiranya terdapat percanggahan maklumat antara *softcopy* dan *hardcopy*, Dokumen dalam *hardcopy* hendaklah digunapakai.

2.1.13 Sekiranya Penyebut Harga didapati memberikan maklumat palsu atau sengaja menyorok atau tidak memberikan mana-mana maklumat yang memberikan kesan negatif terhadap keupayaannya, Sebut Harganya akan ditolak dan tindakan tatatertib akan diperakukan terhadapnya.

2.2 ***Intergrity Pact***

2.2.1 Penyebut Harga wajib mengemukakan Surat Akuan Pembida seperti di **Lampiran 9A** dimana ia berwaad untuk tidak menawar atau memberi rasuah kepada mana-mana individu lain sebagai sogokan untuk dipilih dalam tawaran ini. Wakil Syarikat yang menandatangani Surat Akuan Pembida ini hendaklah juga melampirkan Surat Perwakilan Kuasa menandatangani bagi pihak Syarikat.

2.2.2 Surat Akuan Pembida tersebut adalah menjadi salah satu dokumen wajib dalam penilaian Sebut Harga. Sekiranya Penyebut Harga gagal mengemukakan Surat Akuan tersebut, Penyebut Harga akan dinilai sebagai gagal dalam penilaian Sebut Harga.

2.2.3 Penyebut Harga yang berjaya wajib mengemukakan Surat Akuan Pembida Berjaya seperti di **Lampiran 9B** beserta dengan Borang Perjanjian Inden Kerja yang telah ditandatangani di mana ia berwaad tidak akan memberi rasuah sebagai ganjaran kerana mendapatkan kontrak. Wakil Syarikat yang menandatangani Surat Akuan Pembida ini hendaklah juga melampirkan Surat Perwakilan Kuasa menandatangani bagi pihak Syarikat. Surat Akuan ini akan menjadi sebahagian daripada Dokumen Kontrak.

2.3 Penyerahan Dokumen Sebut Harga

2.3.1 Dokumen Sebut Harga yang telah diisi dengan lengkap hendaklah dimasukkan ke dalam sampul surat berlakri yang dicatatkan dengan bilangan Sebut Harga serta tajuk Sebut Harga dan hendaklah dimasukkan ke dalam peti Sebut Harga pada masa dan tempat yang ditetapkan dalam Notis Sebut Harga.

2.3.2 Jika Dokumen Sebut Harga tidak diserahkan dengan tangan, Penyebut Harga hendaklah menghantar Dokumen tersebut secara pos berdaftar supaya tiba pada atau sebelum masa dan di tempat yang ditetapkan seperti berikut:

- **ALAMAT : PEJABAT PENGARAH,**
  Politeknik Port Dickson,
  KM 14 Jalan Pantai,
  71050 Si Rusa, Port Dickson,
  Negeri Sembilan Darul Khusus

- **TARIKH TUTUP : 24.08.2026 (ISNIN)**

- **MASA : Sehingga 12.00 Tengahari Sahaja**

2.3.3 Sebut Harga yang diserahkan selepas masa yang ditetapkan, atas sebarang sebab, tidak akan dipertimbangkan.

2.4 Penjelasan Lanjut

Sekiranya terdapat maklumat dalam Dokumen Sebut Harga yang tidak jelas atau bercanggah, Penyebut Harga boleh menghubungi pejabat yang menjual Dokumen Sebut Harga untuk penjelasan lanjut.

3. TEMPOH SIAP KERJA

Kerja ini hendaklah disiapkan dalam tempoh **8 minggu – 10 minggu**. Mana-mana Penyebut Harga yang menawarkan tempoh siap kerja melebihi tempoh siap kerja maksimum yang ditetapkan tidak akan dipertimbangkan.

4. PERBELANJAAN PENYEDIAAN SEBUT HARGA

Semua perbelanjaan bagi penyediaan Sebut Harga ini hendaklah ditanggung oleh Penyebutharga sendiri.

5. TEMPOH SAH SEBUT HARGA

Sebut harga ini sah selama 90 hari dari tarikh tutup Sebut Harga. Penyebut harga tidak boleh menarik balik Sebut Harganya sebelum tamat tempoh sah laku Sebut Harga. Laporan mengenai penarikan balik Sebut Harga oleh Penyebut Harga akan dikemukakan kepada CIDB/BPKU untuk tindakan.

6. PERINGATAN MENGENAI KESALAHAN RASUAH

Semua Penyebut Harga adalah diingatkan supaya tidak terlibat dalam aktiviti jenayah rasuah berkaitan dengan perolehan ini. Sehubungan dengan itu, para Penyebut Harga diberi peringatan berikut:

6.1 Sebarang perbuatan atau percubaan rasuah untuk menawar atau memberi, meminta atau menerima apa-apa suapan secara rasuah kepada dan daripada mana-mana orang berkaitan perolehan ini merupakan satu kesalahan jenayah di bawah Akta Suruhanjaya Pencegahan Rasuah Malaysia 2009 (Akta 694).

6.2 Sekiranya mana-mana pihak ada menawar atau memberi apa-apa suapan kepada mana-mana anggota perkhidmatan awam, maka pihak yang ditawar atau diberi suapan dikehendaki membuat aduan dengan segera ke pejabat Suruhanjaya Pemcegahan Rasuah atau balai polis yang berhampiran. Kegagalan berbuat demikian adalah merupakan suatu kesalahan di bawah Akta Suruhanjaya Pencegahan Rasuah Malaysia 2009 (Akta 694).

6.3 Tanpa prejudis kepada tindakan-tindakan lain, tindakan tatatertib terhadap anggota perkhidmatan awam dan menyenaraihitamkan Kontraktor boleh diambil sekiranya pihak-pihak terlibat dengan kesalahan rasuah di bawah Akta Suruhanjaya Pencegahan Rasuah Malaysia 2009 (Akta 694).

6.4 Mana-mana Kontraktor yang membuat tuntutan bayaran berkaitan perolehan ini walaupun tiada kerja dibuat mengikut spresifikasi yang ditetapkan dan mana-mana anggota perkhidmatan awam yang mengesahkan tuntutan berkenaan adalah melakukan kesalahan di bawah Akta Suruhanjaya Pencegahan Rasuah Malaysia 2009 (Akta 694).

KEHENDAK AM

Sebutharga : **KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH , REMBAU, NEGERI SEMBILAN DARUL KHUSUS.**

1.0 SPESIFIKASI DAN SYARAT-SYARAT SEBUT HARGA UNTUK KERJA

Spesifikasi yang terkandung di dalam Borang Sebutharga Kerja hendaklah dibaca bersama Kehendak Am ini bagi memperjelaskan perincian kepada butiran-butiran kerja yang telah diperhargakan.

Setiap kontraktor yang mengambil bahagian di dalam Sebutharga ini diingatkan supaya mengambilkira kos perlaksanaan kerja yang telah dinyatakan di dalam Kehendak Am ini.

1.1 PEMERIKSAAN TAPAK BINA

1.1.1 Kontraktor disifatkan telah memeriksa dan meneliti tapak bina dan sekitarnya, bentuk dan jenis tapak bina, takat dan jenis kerja, bahan dan barang yang perlu bagi menyiapkan Kerja, cara-cara perhubungan dan laluan masuk ke tapak bina dan hendaklah mendapatkan sendiri segala maklumat yang perlu tentang risiko, luar jangkaan dan segala hal keadaan yang mempengaruhi dan menjejas sebut harganya. Sebarang tuntutan yang timbul akibat daripada kegagalan Kontraktor mematuhi kehendak ini tidak akan dipertimbangkan.

1.1.2 Menyediakan peralatan/laporan yang berkaitan dengan pematuhan kepada SOP yang telah ditetapkan oleh MKN dari masa ke semasa dalam kawasan pembinaan semasa pandemik Covid-19 sepanjang tempoh perlaksanaan kerja.

1.2 INSURANS

1.2.1 Kontraktor hendaklah atas nama bersama Kerajaan dan kontraktor mengambil Insurans Liabiliti Awam dan Insurans Kerja * (sekiranya dinyatakan di dalam Butir-butir Ringkasan Sebutharga) bagi tempoh perlaksanaan Kerja).

1.2.2 Kontraktor hendaklah mengemukakan kepada Pegawai Inden semua polisi Insurans yang tersebut di atas sebelum memulakan Kerja. Bagaimana pun untuk tujuan memulakan Kerja sahaja Nota-nota Perlindungan dan resit-resit bayaran premium adalah mencukupi.

1.3 PERATURAN PERLAKSANAAN KERJA

1.3.1 Kerja-kerja yang dilaksanakan hendaklah mematuhi Spesifikasi, pelan-pelan, butir-butir kerja dalam Ringkasan Sebut Harga dan Syarat-syarat yang dinyatakan dalam Dokumen Sebut Harga ini dan arahan Pegawai Inden atau Wakilnya.

1.3.2 Kerja-kerja yang dilaksanakan di perenggan 1.3.1 di atas, hendaklah juga mematuhi semua peraturan dan pekeliling, undang-undang dan undang-undang kecil yang diluluskan oleh :

i) Jabatan Keselamatan Pekerjaan dan Kesihatan
ii) Jabatan Bomba dan Penyelamat
iii) Pihak Berkuasa Tempatan
iv) SPAN
v) Syarikat Air Negeri Sembilan (SAINS)
vi) Suruhanjaya Tenaga

1.4 SUB-SEWA DAN MENYERAH HAK KERJA

Kontraktor tidak dibenarkan mengsub-sewakan Kerja kepada Kontraktor-kontraktor lain. Kontraktor tidak boleh menyerahhak apa-apa faedah di bawah Inden ini tanpa terlebih dahulu mendapatkan persetujuan bertulis daripada Pegawai Inden.

1.5 PENOLAKAN BAHAN, BARANG DAN MUTU HASIL KERJA OLEH PEGAWAI INDEN

1.5.1 Pegawai Inden atau Wakilnya berhak menolak bahan, barang dan mutu hasil kerja dari jenis piawaian yang tidak menepati seperti diperihalkan dalam sepesifikasi. Kontraktor hendaklah, apabila diminta oleh Pegawai Inden, memberi kepadanya baucar-baucar dan/atau perakuan ujian pengilang untuk membuktikan bahawa bahan-bahan dan barang-barang itu mematuhi Spesifikasi. Bahan, barang dan kerja-kerja yang ditolak hendak diganti dan sebarang kos tambahan yang terlibat hendaklah ditanggung oleh Kontraktor sendiri.

1.5.2 Kontraktor hendaklah dengan sepenuhnya atas perbelanjaan sendiri menyediakan sampel bahan dan barang-barang untuk ujian.

1.5.3 Tiada penggantian untuk peralatan, bahan dan cara kerja yang telah ditentukan di dalam spesifikasi atau ditawarkan dan telah diterima, dibenarkan kecuali mendapat persetujuan daripada Pegawai Inden secara bertulis.

1.5.4 Semua alatganti yang digunakan hendaklah ‘genuine’ dan perlu disahkan oleh pengilang.

1.6 RINGKASAN SEBUT HARGA

1.6.1 Ringkasan Sebut Harga hendaklah menjadi sebahagian daripada Borang Sebut Harga ini dan hendaklah menjadi asas Jumlah Sebut Harga.

1.6.2 Harga-harga dalam Ringkasan Sebut Harga hendaklah mengambil kira semua kos termasuk kos pengangkutan, cukai, duti, bayaran dan caj-caj lain yang perlu dan berkaitan bagi penyiapkan kerja dengan sempurnanya.

1.6.3 Tiada sebarang tuntutan akan dilayan bagi pelarasan harga akibat daripada perubahan kos buruh, bahan-bahan dan semua duti dan cukai Kerajaan, sama dan dalam tempoh sah sebut harga atau dalam tempoh Kerja.

1.6.4 Harga-harga dalam Ringkasan Sebut Harga yang dikemukakan oleh Kontraktor hendaklah tertakluk kepada persetujuan sebelumnya daripada Pegawai Inden tentang kemunasabahannya. Persetujuan hendaklah dibuat ke atas apa-apa pelarasan kemudiannya kepada harga-harga Ringkasan Sebut Harga.

1.6.5 Apa-apa pelarasan harga dalam Ringkasan Sebutharga menurut Perenggan tersebut di atas dan apa-apa kesilapan pengiraan Ringkasan Sebutharga hendaklah dilaras dan diperbetulkan sebelum Inden Kerja dikeluarkan. Jumlah amaun yang dilaraskan hendaklah sama dengan amaun jumlah harga Pukal dalam borang Sebutharga. Amaun jumlah harga pukal dalam Borang Sebutharga hendaklah tetap tidak berubah.

1.7 KEGAGALAN KONTRAKTOR MENYIAPKAN

1.7.1 Pegawai Inden berhak membatalkan Inden Kerja sekiranya Kontraktor berada dalam keadaan berikut dan setelah menerima surat amaran daripada Pegawai Inden:

i) Sekiranya Kontraktor masih gagal menyiapkan Kerja dalam tempoh masa yang telah ditetapkan.
ii) Kemajuan Kerja terlalu lembab tanpa apa-apa sebab yang munasabah.
iii) Penggantungan perlaksanaan seluruh atau sebahagian Kerja, tanpa apa-apa sebab yang munasabah.
iv) Tidak mematuhi arahan Pegawai Inden tanpa apa-apa alasan yang munasabah dan,
v) Apabila Kontraktor diisytiharkan bankrap oleh pihak yang sah.

1.8 PERUBAHAN KERJA

1.8.1 Pegawai Inden boleh menurut budi bicaranya mengeluarkan arahan-arahan yang berkehendakkan sesuatu perubahan dengan secara bertulis. Tiada apa-apa perubahan yang dikeluarkan oleh Pegawai Inden atau yang disahkan kemudian oleh Pegawai Inden boleh membatalkan Sebutharga ini.

1.8.2 Semua kerja Perubahan dan tambahan yang diluluskan oleh Pegawai Inden akan diukur atau dinilai dengan menggunakan kadar harga yang ada dalam senarai kuantiti/ Ringkasan Sebutharga. Jika tidak terdapat sebarang kadar harga yang berasingan kadar harga yang dipersetujui oleh Pegawai Inden dan kontraktor hendaklah digunakan.

1.9 PENGUKURAN KUANTITI SEMENTARA

Setelah kerja-kerja yang melibatkan Kuantiti Sementara disiapkan di tapak, pengukuran semula kuantiti hendaklah dibuat secara bersama.

1.10 LAPORAN BERGAMBAR

Kontraktor dikehendaki menyediakan dan mengemukakan kepada Pengarah Politeknik Port Dickson Laporan Kemajuan Bergambar sebelum, semasa dan selepas siap kerja dalam bentuk '*Hardcopy* (2 salinan *gloss paper*) dan '*Softcopy*' (*Pendrive*)

1.11 TEMPOH TANGGUNGAN KECACATAN (DLP)

1.11.1 Tempoh Tanggungan Kecacatan bagi sebut harga hendaklah selama **Dua Belas (12) Bulan** dari tarikh kerja diperlakukan siap. Bagi kerja-kerja mekanikal dan elektrikal dimana tempoh waranti ke atas alat-alat dan loji-loji adalah **Dua Belas (12) Bulan** dan dalam kes-kes tertentu oleh kerana jenis dan kerumitan kerja, tempoh tanggungan kecacatan yang lebih lama daripada dua belas (12) bulan boleh dikenakan.

1.11.2 Kontraktor dipertanggungjawabkan untuk membaiki kecacatan, ketidaksempurnaan, kekecutan atau apa-apa kerosakan lain yang mungkin kelihatan dan yang disebabkan oleh bahan atau barang atau mutu hasil kerja yang tidak menepati sebut harga ini apabila diarahkan oleh Pegawai Inden dan dalam masa yang berpatutan. Kontraktor hendaklah membaiki kecacatan, ketidaksempurnaan, kekecutan atau apa-apa jua kerosakan lain atas kos Kontraktor sendiri.

1.11.3 Sekiranya Kontraktor gagal membaiki kecacatan, ketidaksempurnaan, kekecutan atau apa-apa jua kerosakan lain seperti yang diarahkan, Pegawai Inden berhak memotong kos membaiki dari baki wang yang akan dibayar kepada Kontraktor atau, jika baki itu tiada atau tidak mencukupi, mengeluarkan surat pensyoran kepada Lembaga Pembangunan Industri Pembinaan untuk menggantungkan pendaftaran Kontraktor, dan menghantar salinan-salinan surat tersebut kepada Bahagian Pembangunan Bumiputra.

1.12 PERATURAN MEMBAYAR SELEPAS SIAP

Bayaran sepenuhnya hanya akan dibayar setelah kontraktor menyiapkan kerja dengan sempurnanya dan Perakuan Siap Kerja dikeluarkan. Kontroktor hendaklah mengembalikan Borang-borang Inden Kerja Asal, laporan bergambar, sijil-sijil berkaitan dan lain-lain dokumen seperti mana diperlukan kepada Pegawai Inden.

1.13 PERAKUAN SIAP KERJA

Pegawai Inden dan wakilnya hendaklah memperakui Perakuan Siap Kerja sebaik sahaja kerja disiapkan dengan sempurna dan memuaskan. Tarikh siap kerja ini bermulanya Tempoh Tanggungan Kecacatan.

1.14 PERAKUAN SIAP MEMPERBAIKI KECACATAN.

Pegawai Inden dan wakilnya hendaklah memperakui Perakuan Siap Membaiki Kecacatan sebaik sahaja Kontraktor telah membaiki kecacatan, ketidaksempurnaan, kekecutan atau apa-apa jua kerosakan lain.

1.15 PEMATUHAN KEPADA UNDANG-UNDANG OLEH KONTRAKTOR

Kontraktor hendaklah mematuhi segala kehendak Undang-Undang Kecil dan Undang-Undang Berkanun dalam Malaysia semasa pelaksanaan Kerja. Kontraktor tidak berhak menuntut sebarang kos dan bayaran tambahan kerana permatuhannya dengan syarat-syarat ini

a. Pihak kontraktor hendaklah memastikan pekerja-kerja mahir bagi mana-mana kerja terlibat;
b. Pihak kontraktor hendaklah memastikan mana-mana kekotoran serta sisa-sisa berpunca dari kerja-kerja terlibat dibersih dan dikeluarkan dari kawasan Politeknik;
c. Kontraktor hendaklah membaiki segala kerosakan yang berlaku disebabkan oleh kecuaian pihak kontraktor.

1.16 PENAMATAN BERSABIT RASUAH, AKTIVITI MENYALAHI UNDANG-UNDANG ATAU AKTIVITI HARAM

1.16.1 Tanpa menjelaskan apa-apa hak Kerajaan yang lain, jika kontraktor, personel, kakitangan atau pekerjanya diasbitkan bersalah oleh mahkamah kerana rasuah atau aktiviti menyalahi undang-undang atau aktiviti haram yang berkait dengan Perjanjian / Kontrak ini atau mana-mana perjanjian lain yang Kontraktor mungkin ada dengan Kerajaan, Kerajaan berhak untuk menamatkan Perjanjian / Kontrak ini pada bila-bila masa, dengan memberi notis bertulis dengan segera yang membawa maksud sedemikan kepada Kontraktor.

1.16.2 Setelah penamatan tersebut (Kerajaan berhak terhadap semua kerugian, kos, ganti rugi dan perbelanjaan (termasuk apa-apa kos dan perbelanjaan sampingan) yang ditanggung oleh Kerajaan yang timbul daripada penamatan tersebut.

1.16.3 Bagi mengelakkan keraguan, kedua-dua pihak Kerajaan dan Kontraktor bersetuju bahawa Kontraktor tidak layak terhadap sebarang bentuk kerugian termasuk kehilangan keuntungan, ganti rugi, tuntutan atau apa sekalipun setelah penamatan Kontrak ini.

2.0 KAWALAN KESELAMATAN

Kontraktor diwajib memastikan arahan-arahan keselamatan di tapak dan kaedah kerja selamat ditepati bagi mengelak sebarang kecelakaan (seperti mana yang dijelaskan oleh Jabatan Keselamatan & Kesihatan Pekerja, CIDB).

PERAKUAN :

Adalah saya pihak kontraktor yang mengambil bahagian di dalam Sebutharga ini bersetuju dengan Kehendak Am ini.

Saya juga bersetuju atas segala kos yang terbit dari kerja-kerja yang dinyatakan di dalam Kehendak Am tidak akan menuntut apa-apa bayaran tambahan kepada Politeknik Port Dickson.

Tarikh :

Tandatangan :

Cop Nama Syarikat :

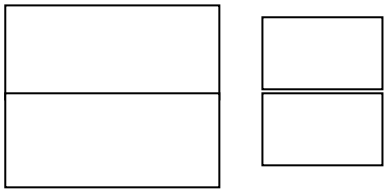
Nota

Kehendak Am ini hendaklah dikembalikan bersama-sama Borang Sebutharga yang telah diperhargakan.

No Siri :

BORANG SEBUTHARGA KERJA

Sebut Harga Bil : _____



……
……
……
……

Tuan,

Sebutharga untuk : KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS

Di bawah dan tertakluk kepada arahan kepada Petender , Syarat-syarat Am, sebut harga spesifikasi kerja dan pelan-pelan, saya yang bertandatangan di bawah ini adalah dengan ini menawarkan untuk melaksanakan dan menyiapkan kerja-kerja tersebut bagi jumlah harga pukal sebanyak ;

Ringgit Malaysia:**.....**

.....(RM).....

2. Saya bersetuju menyiapkan kerja-kerja ini dalam masa **...……** minggu dan tarikh akhir tempoh mula kerja seperti yang diarahkan oleh Pegawai Inden.

Bertarikh pada……haribulan……20……

…….	…….
(Tandatangan Kontraktor)	(Tandatangan Saksi)
Nama Penuh :……	Nama Penuh :……..……..
No. K/P :……	No. K/P :…..…….……
Alamat :..……	Alamat :……...…..……
……..…..	……..…..…….
……..…..	……..…..…….
No. Tel : ……..……..…	No. Tel :……..…….……..
Atas Sifat : ……..……..……	

Meterai atau Cap Kontrak

KLAUSA PENCEGAHAN RASUAH DALAM DOKUMEN PEROLEHAN KERAJAAN

a) Without prejudice to any other rights of the Goverment, if the (Company/Frirm), its personnel, servants or employees is convicted by the court of law for corruption or unlawful or illegal activities in relation to this [Agreement/Contract] or any other agreement that the [Company/Firm] may have with the Goverment, the Goverment shall be entitled to terminate this [Agreement/Contract] at any time, by giving immediate written notice to that effect to the [Company/Firm].

b) Upon such termination, the Goverment shall be entitled to all losses, costs, damages and expenses (including any incidental costs and expenses) incurred by the Goverment arising from such termination

c) For any avoidance of doubt, the Parties hereby agree that the [Company/Firm] shall not be entitled to any form of losses including loss of profit, damages, claims or whatever upon termination of this [Agreement/Contract]*

SYARAT-SYARAT SEBUTHARGA

1. Kontraktor yang berjaya dalam tawaran hendaklah membeli polisi-polisi Insurans (Pampasan Pekerja) (Pampasan Awam) sebelum memulakan kerja. Ini ialah untuk memberi perlindungan kepada Kerajaan terhadap sebarang tuntutan atau tindakan Mahkamah berpunca dari sebarang kemalangan atau kerosakan berkaitan dengan kerja-kerja tersebut. Segala perbelanjaan yang difikirkan perlu bolehla dimasukkan ke dalam harga tawaran penentuan (preliminaries).

2. Kontraktor dinasihatkan supaya membuat lawatan ke tapak-tapak bina dan menyaksikan sendiri keadaan kerja yang perlu dijalankan kerana sebarang tuntutan tambahan tidak akan dilayani selepas tawaan diterima disebabkan kesilapan membuat taksiran.

3. Kontraktor yang berjaya dalam tawaran hendaklah memberitahu pejabat ini sebelum menjalankan kerja-kerjanya. Kerja-kerja hendaklah dimulakan dalam masa satu (1) minggu dari tarikh Inden dikeluarkan.

4. Bayaran denda sebanyak 0.0185% X harga kontrak/sebutharga bagi sehari akan dikenakan sekiranya kontraktor gagal menyiapkan kerja-kerja berikut dalam tempoh waktu yang telah ditetapkan ataupun dalam tempoh waktu yang dilanjutkan.

5. Kontraktor hendaklah mengambil perhatian iaitu kerja-kerja dan bahan-bahan yang digunakan mestilah mengikut peraturan spesifikasi JKR yang disertakan (jika tidak disertakan adalah mengikut ‘Spesifikasi Piawai untuk kerja-kerja binaan bangunan’ yang dikeluarkan oleh JKR) dan menunjukkan contoh kepada Pegawai Penguasa sebelum ianya dipasang.

6. Segala bahan-bahan yang digunakan hendaklah mengikut syarat-syarat yang ditetapkan dan diluluskan serta mendapat kelulusan Pegawai Penguasa terlebih dahulu.

7. Kontraktor hendaklah membersihkan segala sampah sarap dan bahan-bahan yang tidak diperlukan dari tapakbina seperti yang diarah oleh Pegawai Penguasa sebelum bayaram dijelaskan. Kontraktor juga harus membaiki segala kerosakan yang disebabkan oleh Kontraktor sendiri.

8. Kerja-kerja yang telah siap akan diukur semula dan bayaran akan dijelaskan setelah semua kerja-kerja dalam sebutharga disiapkan dengan sempurna dan memuaskan.

9. Kerajaan adalah tidak terikat untuk menerima sebutharga yang terendah atau mana-mana sebutharga atau memberi apa-apa sebab atas penolakkan sesuatu sebutharga. Keputusan Jawatankuasa Sebutharga adalah muktamad.

10. Pegawai Penguasa dan Wakilnya berhak menolak bahan, barang-barang dan kerja oleh Kontraktor yang tidak mematuhi Spesifikasi dan bahan-bahan binaan dan kerja yang

ditolak hendaklah diganti atau dibuat semula dan sebarang kos yang terlibat hendaklah ditanggung oleh kontraktor sendiri.

11. Kontraktor dikehendaki membaiki segala kecacatan, ketidaksempurnaan atau segala kerosakan yang disebabkan oleh bahan atau barang atau mutu hasil kerja yang berlaku dalam Tempoh Tanggungan Kecacatan. Tempoh Tanggungan Kecacatan adalah selama 12 bulan selepas tarikh siap kerja.

12. Saya yang bertandatangan di bawah ini telah memahami dan akan mematuhi segala syarat-syarat yang tersebut seperti di atas.

Tarikh : .....

.....
Tandatangan Kontraktor &
Cop Syarikat

SYARAT-SYARAT ELEMEN KESIHATAN DAN KESELAMATAN PEKERJAAN

"AKU JANJI KONTRAKTOR"

1. Mengenalpasti hazad yang sedia ada di tempat kerja atau semasa menjalankan kerja.
2. Memaklumkan kehadiran semua pekerja kepada Pengarah PPD sebelum mula bekerja.
3. Memastikan alat-alat perlindungan pekerja yang sesuai berada di dalam keadaan yang baik dan cukup untuk semua pekerja.
4. Memastikan semua pekerja menggunakan alat-alat perlindungan pekerja yang disediakan.
5. Laluan atau tempat kerja yang boleh mendatangkan risiko KKP mestilah ditutup sepenuhnya atau dikawal.
6. Jika terdapat kecederaan atau reaksi alahan yang serius, sila dapatkan rawatan segera dan laporkan kepada Pegawai PPD secepat mungkin.
7. Jika anda berada dalam keadaan kecemasan yang akan membahayakan anda, sila laporkan segera kepada Pegawai PPD untuk mendapatkan bantuan daripada agensi lain jika perlu.
8. Mematuhi semua peraturan, prosedur atau arahan oleh Pengarah PPD.

Kami telah baca dan faham peraturan-peraturan yang tercatat dalam dokumen ini. Kami memahami dengan sepenuhnya dan terimanya sebagai tanggungjawab syarikat kami sebagai kontraktor Politeknik Port Dickson dan akan memastikan semua pekerja kami dan sub-kontraktor memahami and mematuhi semua peraturan dan panduan yang termaktub dalam organisasi anda.

Tarikh : ....

Tandatangan Kontraktor &
Cop Syarikat

LAMPIRAN D

SURAT AKUAN PEMBIDA

BAGI

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU NEGERI SEMBILAN DARUL KHUSUS

PPD/400(S)5/7/10-2026

Saya, ……. Nombor Kad Pengenalan …… yang mewakili syarikat …..…… nombor Pendaftaran …… dengan ini mengisytiharkan bahawa saya atau mana-mana individu yang mewakili syarikat ini tidak akan menawar atau memberi rasuah kepada mana-mana individu dalam **POLITEKNIK PORT DICKSON, JABATAN PENDIDIKAN POLITEKNIK, KEMENTERIAN PENGAJIAN TINGGI MALAYSIA** atau mana-mana individu lain, sebagai sogokan untuk dipilih dalam sebutharga seperti diatas. Bersama-sama ini dilampirkan Surat Perwakilan Kuasa bagi saya mewakili syarikat seperti tercatat di atas untuk membuat perisytiharaan ini.

2. Sekiranya saya atau mana-mana individu yang mewakili syarikat ini didapati bersalah menawar atau memberi rasuah kepada invividu dalam **POLITEKNIK PORT DICKSON, JABATAN PENDIDIKAN POLITEKNIK, KEMENTERIAN PENGAJIAN TINGGI MALAYSIA** atau mana-mana individu lain sebagai sogokan untuk dipilih dalam sebutharga seperti di atas, maka saya sebagai wakil syarikat bersetuju tindakan-tindakan berikut diambil :

2.1 penarikan balik tawaran kontrak bagi sebutharga di atas

2.2 penamatan kontrak bagi sebutharga di atas; dan

2.3 lain-lain tindakan tatatertib mengikut peraturan perolehan Kerajaan

3. Sekiranya terdapat mana-mana individu cuba meminta rasuah daripada saya atau mana-mana individu yang berkaitan dengan syarikat ini sebagai sogokan untuk dipilih dalam sebut harga seperti di atas, maka saya berjanji akan dengan segera melaporkan perbuatan tersebut kepada Pejabat Suruhanjaya Perkhidmatan Rasuah Malaysia (SPRM) atau Balai Polis yang berhampiran.

Yang Benar, Cop Syarikat :

.....
Nama :
No.Kad Pengenalan :

SYARAT-SYARAT ELEMEN KESIHATAN DAN KESELAMATAN PEKERJAAN

"AKU JANJI KONTRAKTOR"

1. Mengenalpasti hazad yang sedia ada di tempat kerja atau semasa menjalankan kerja.
2. Memaklumkan kehadiran semua pekerja kepada Pengarah PPD sebelum mula bekerja.
3. Memastikan alat-alat perlindungan pekerja yang sesuai berada di dalam keadaan yang baik dan cukup untuk semua pekerja.
4. Memastikan semua pekerja menggunakan alat-alat perlindungan pekerja yang disediakan.
5. Laluan atau tempat kerja yang boleh mendatangkan risiko KKP mestilah ditutup sepenuhnya atau dikawal.
6. Jika terdapat kecederaan atau reaksi alahan yang serius, sila dapatkan rawatan segera dan laporkan kepada Pegawai PPD secepat mungkin.
7. Jika anda berada dalam keadaan kecemasan yang akan membahayakan anda, sila laporkan segera kepada Pegawai PPD untuk mendapatkan bantuan daripada agensi lain jika perlu.
8. Mematuhi semua peraturan, prosedur atau arahan oleh Pengarah PPD.

Kami telah baca dan faham peraturan-peraturan yang tercatat dalam dokumen ini. Kami memahami dengan sepenuhnya dan terimanya sebagai tanggungjawab syarikat kami sebagai kontraktor Politeknik Port Dickson dan akan memastikan semua pekerja kami dan sub-kontraktor memahami and mematuhi semua peraturan dan panduan yang termaktub dalam organisasi anda.

Tarikh : ....

Tandatangan Kontraktor &
Cop Syarikat

LAMPIRAN A2

KEMENTERIAN PENDIDIKAN TINGGI MALAYSIA

BORANG PENGISYTIHARAN MAKLUMAT SYARIKAT DALAM PEROLEHAN KERAJAAN

TAJUK PEROLEHAN	**:**
NOMBOR SEBUT HARGA/TENDER	**:**
NAMA SYARIKAT	**:**
NO. PENDAFTARAN PERNIAGAAN	**:**
NO. PENDAFTARAN KEMENTERIAN KEWANGAN	**:**
NEGARA SYARIKAT DIPERBADANKAN	**:**
ALAMAT SYARIKAT	**:**
NAMA EJEN (sekiranya syarikat tidak diperbadankan di Malaysia)	**:**
ALAMAT EJEN (sekiranya syarikat tidak diperbadankan di Malaysia)	**:**

PERAKUAN

TANDATANGAN	**:**
NAMA WAKIL SYARIKAT	**:**
NO. KAD PENGENALAN	**:**
COP SYARIKAT	**:**
TARIKH	**:**

Nota: Penandatangan wakil syarikat hendaklah individu yang diberi kuasa oleh syarikat bagi urusan perolehan Kerajaan seperti di Sijil Akuan Pendaftaran Syarikat dengan Kementerian Kewangan. Kegagalan/ pemalsuan syarikat dalam mengisytiharkan perakuan boleh menyebabkan tawaran tidak dipertimbangkan.

LAMPIRAN 12

BORANG PEMBERITAHUAN PEMUNYA BENEFISIAL

☐ Berdaftar dengan Suruhanjaya Syarikat Malaysia (SSM) dan telah menyerah simpan maklumat pemunyaan benefisial di SSM

☐ Berdaftar dengan SSM dan tidak perlu menyerah simpan maklumat pemunya benefisial di SSM (syarikat enterprise) (Perlu menghantar borang tanpa diisi)

☐ Tidak berdaftar dengan Suruhanjaya Syarikat Malaysia (SSM) (Perlu menghantar borang tanpa diisi)

Tandakan ☑

Nama Syarikat :
Butiran Pemunya Benefisial :

Nama Individu	No. Kad Pengenalan / No. Pasport	Jawatan dalam syarikat (sekiranya ada)	Kewarganegaraan

Saya…….....……nombor kad pengenalan / nombor pasport…..…….....yang mewakili syarikat/perniagaan…….....nombor pendaftaran……. (*MOF/CIDB/SSM) dengan sesungguhnya dan sebenarnya mengesahkan bahawa senarai pemunya benefisial syarikat seperti mana pemberitahuan dalam borang ini adalah sama dengan maklumat yang diserah simpan kepada Suruhanjaya Syarikat Malaysia (SSM) berdasarkan Akta Syarikat 2016 [*Akta 777*] dan garis panduan yang dikeluarkan oleh Suruhanjaya Syarikat Malaysia (SSM).

Yang benar,

Tandatangan : .....

Nama : .....

No.KP : .....

Jawatan : .....

Tarikh : .....

Cap Syarikat : .....

Catatan :

***** Potong mana yang tidak berkenaan

LAMPIRAN 13

SURAT AKUAN SYARIKAT DALAM MENANGANI JENAYAH
PEMERDAGANGAN ORANG DAN BURUH PAKSA

KERJA-KERJA PENYELENGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

PPD/400(S)5/7/10-2026

Saya, ……..... No. Kad Pengenalan ..... yang mewakili ..... (Nama Syarikat) nombor Pendaftaran .....…… (MOF/PKK/CIDB/ROS/ROC/ROB) dengan ini mengisytiharkan bahawa saya atau mana-mana orang yang mewakili syarikat ini akan:

i. Mendidik pekerja dan ahli organisasi mengenai cara mengenal pasti dan melaporkan tanda-tanda pemerdagangan orang dan buruh paksa;
ii. Meningkatkan kesedaran tentang hak pekerja, perlindungan dan akses kepada remedi; dan
iii. Memastikan pematuhan kepada undang-undang mengenai jenayah pemerdagangan orang dan buruh paksa selaras dengan Akta Antipemerdagangan Orang dan Antipenyeludupan Migran 2007 [*Akta 670*] dan Akta Kerja 1955 [*Akta 265*] serta mana- mana peruntukan undang-undang yang berkuat kuasa di Malaysia.

2. Sekiranya saya, atau mana-mana individu yang mewakili syarikat ini didapati terlibat dalam jenayah pemerdagangan orang dan buruh paksa, maka saya sebagai wakil syarikat bersetuju tindakan boleh dikenakan ke atas syarikat di bawah Akta Antipemerdagangan Orang dan Antipenyeludupan Migran 2007 [*Akta 670*] dan Akta Kerja 1955 [*Akta 265*] serta mana-mana peruntukan undang-undang yang berkuat kuasa di Malaysia.

Yang benar,

Tandatangan : .....

Nama : .....

No.KP : .....

Tarikh : .....

Cap Syarikat : .....

NO. SEBUTHARGA : PPD/400(S)5/7/10-2026

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

Petender hendaklah merujuk kepada Spesifikasi Piawai, Spesifikasi Addenda dan lukisan-lukisan tender seperti yang disenaraikan semasa menghargakan setiap keterangan kerja. Sebarang keterangan kerja yang tidak dihargakan adalah dianggap telah dikira dan dimasukkan didalam harga keterangan kerja yang lain. Pentender adalah dianggap telah melawat tapak bina dan membaca Syarat-syarat kontrak bersama-sama dengan lukisan-lukisan tender dan Spesifikasi untuk mempastikan sendiri liputan kerja yang terlibat sebelum menghargakan tendernya kerana sebarang tuntutan tambahan berhubung perkara diatas akibat kurang pengetahuan tidak akan dilayan.

(Senarai Kuantiti Kerja adalah sementara)

KERJA AWAM

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
1.0	**KEHENDAK PERMULAAN DAN SYARAT-SYARAT AM**				
	1.1 Peruntukan atas butir-butir dalam syarat-syarat sebutharga dan butiran tersebut tidak dinyatakan dalam Ringkasan Sebutharga termasuk Insuran Tanggungan Awam dan Pampasan Pekerja.	Pukal			
	1.2 Kerja-kerja membaiki kerosakan kepada apron, lantai, jalan-jalan sediada dan persekitaran tapak pembinaan serta kerja-kerja pengalihan utiliti dan lain-lain kemudahan awam yang terlibat semasa dan selepas pembinaan.	Pukal			
	1.3 Kerja-kerja membersihkan tapak setelah siap kerja. Pihak kontraktor hendaklah memastikan mana-mana sisa-sisa kerja dan kekotoran berpunca dari kerja-kerja terlibat dibersih dan dikeluarkan dari kawasan masjid.	Pukal			
	1.4 Kontraktor hendaklah menyediakan bekalan air dan elektrik yang mencukupi untuk melaksanakan kerja-kerja termmasuk membayar bayaran penggunaan bekalan air serta elektrik seperti yang telah ditetapkan	Pukal			
	1.5 Sampel bahan dan ujian.	Pukal			
	NOTA; **a) Pihak syarikat hendaklah WAJIB mengadakan papan tanda keselamatan di lokasi kerja serta semua kelengkapan keselamatan termasuk *'safety harness'* untuk pekerja-pekerja di tapak.** **a) Pihak kontraktor hendaklah mengemukakan Laporan kemajuan kerja bergambar sebelum, semasa dan selepas (2 salinan 'gloss paper') dan 'soft copy' (pendrive).**				
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
2.0	**KERJA PENYELENGGARAAN BUMBUNG**				
	2.1 RUANG SOLAT LELAKI				
	2.1.1 Kerja-kerja membuka bumbung lama , membekal dan memasang bumbung baru jenis *metal deck* yang baru berketebalan 0.47mm (tct) atau setara denganya berserta lapisan aluminium foil dengan segala peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	M2	90		
	2.1.2 Kerja-kerja membuka kerangka dan siling lama , membekal dan memasang kerangka dan siling baru dari jenis aluminium strip siling dengan segala peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	M2	90		
	2.2 RUANG SOLAT WANITA				
	2.2.1 Kerja-kerja membuka kerangka dan bumbung lama , membekal , memasang kerangka dan bumbung baru dari jenis *metal derk* yang berketebalan 0.47 mm (tct) atau setara denganya termasuk berserta lapisan aluminium foil dengan segala peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	M2	75		
	NOTA: **a) Metal Deck yang digunakan adalah dari jenis FU FOAM dengan jaminan pembekal 10 tahun.** **b) Kontraktor perlu mengemukakan cadangan shop drawing yang berkaitan bagi item kerja pengantian kerangka bumbung yang yelah diluluskan oleh Pegawai Yang Bertauliah / Berkelayakan (PE) serta mendapat kelulusan daripada Pegawai Penguasa sebelum kerja dijalankan di tapak.**				
	Jumlah Dibawa Ke Belakang				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
	Jumlah Kecil Dari Hadapan				
2.2.2	Kerja-kerja membuka siling lama , membekal dan memasang siling yang baru dari jenis tetap (*fix ceiling*) bersaiz 1200 mm x 600 mm x 3.2 mm tebal termasuk kerangka mengikut spesifikkasi dan rekabentuk asal dengan segala peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut arahan Pegawai Penguasa.	M2	75		
2.3	**KERJA PENGANTIAN SALUR AIR HUJAN DAN *GUTTER***				
2.3.1	Kerja-kerja membuka, membuang saluran air hujan *'gutter'* dari jenis UPVC sediada dan mengganti baru dengan segala kelengkapan pemasangan yang berkaitan serta membawa keluar sisa bahan dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	M	64		
2.3.2	Kerja-kerja membuka, membuang dan memasang baru salur air hujan (RWDP) sediada yang rosak bersaiz 100 mm diameter termasuk kerja -kerja penyelenggaaran dan pembersihan dengan segala peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	M	60		
2.4	**KERJA LEPAAN KALIS AIR (*WATER PROOFING)***				
2.4.1	Kerja-kerja penyelenggaraan dan pembersihan *slab* konkrit termasuk kerja-kerja menyapu 1 lapisan lepaan '*primer'* dan 3 lapisan lepaan kalis air (*water proofing*) serta kelengkapan yang berkaitan mengikut spesifikasi dan arahan Pegawai Penguasa. **Sijil Jaminan adalah dalam tempoh 5 tahun perlu di sertakan.**	M2	200		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
3.0	**KERJA PEMBAIKAN RUANG SOLAT**				
	3.1 MIHRAB				
3.1.1	Melantik pakar reka bentuk dalaman (interoir designer) bagi merekabentuk dan memasang hiasan mihrab bagi dinding sedia ada termasuk menyedikan proposal design, pemasangan, ubahsuai serta kerja-kerja yang berkaitan termasuk kerja elektrik serta mengikut arahan serta kelulusan oleh Pegawai Penguasa.	Pukal			
	3.2 KERJA CAT DINDING LUAR DAN DALAM				
3.2.1	Kerja-kerja membasuh, menggosok atau mengikis dan sebagainya termasuk pada mana-mana permukaan yang rosak perlu dibaiki, menyediakan permukaan dan sapukan sebanyak 1 lapisan cat asas (undercoat) pada permukaan berlepa pada bahagian dinding luar dan dalam serta lain-lain kerja berkaitan mengikut arahan pegawai penguasa	M2	1100		
3.2.2	Kerja-kerja mengecat permukaan dinding bahagian dalaman dengan sapuan 2 lapis menggunakan cat jenis emulsi dengan jaminan 5 tahun ketahanan cat dari syarikat pengeluar cat yang diluluskan pada keseluruhan bahagian ruang dalam bangunan dan lain-lain yang berkaitan seperti yang diarahkan oleh pegawai penguasa.	M2	500		
3.2.3	Kerja-kerja mengecat keseluruhan permukaan dinding bahagian luaran dengan sapuan 2 lapis menggunakan cat jenis tahan rintangan cuaca (wheathershield) dengan jaminan 5 tahun ketahanan cat dari syarikat pengeluar cat yang diluluskan pada keseluruhan bahagian luaran bangunan dan lain-lain yang berkaitan seperti yang diarahkan oleh pegawai penguasa.	M2	600		
	Jumlah Kecil Dibawa Ke Belakang				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
	Jumlah Kecil Dari Hadapan				
	3.3 KERJA PENGANTIAN KARPET BARU				
	3.3.1 Kerja-kerja membuka karpet lama, membekal dan memasang karpet baru16 mm tebal beserta satu lapisan *underlay* 10 mm tebal mengikut arahan daripada Pegawai Penguasa.	M2	280		
	NOTA :				
	Kontraktor perlu mengemukakan sekurang-kurangnya 3 cadangan shop drawing atau katalong yang berkaitan bagi item kerja 3.1,3.2,dan 3.3 tersebut serta mendapat kelulusan daripada Pegawai Penguasa sebelum kerja dijalankan di tapak.				
	3.4 KERJA PENGGANTIAN PINTU MASUK SERTA GERIJI BESI				
	3.4.1 Kerja-kerja membuka pintu masuk lama yang sedia ada , membekal dan memasang pintu masuk yang baru dari jenis pintu gelangsar ('***sliding door')*** aluminium lengkap dengan cermin jenis tempered termasuk dengan segala peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	Bil	1		
	3.4.2 Kerja-kerja membuka geriji besi (*gril* l) tingkap lama yang sedia ada , membekal dan memasang geriji besi (*grill*) tingkap yang baru termasuk dengan segala peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	M2	22		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
	Jumlah Kecil Dari Hadapan				
	3.4.3 Kerja-kerja membuka geriji besi (*gril*) pintu lama yang sedia ada , membekal dan memasang geriji besi (*grill*) pintu yang baru termasuk dengan segala peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	M2	9		
	Jumlah Dibawa Ke Ringkasan Sebutharga				**0.00**

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
4.0	**KERJA PEMBAHAGI RUANG SOLAT**				
	4.1 KERJA MEROBOH				
	4.1.1 Kerja -kerja memecah dinding sediada dan membuat kemasan semula pada bahagian dinding yang terlibat serta membuang sisa bahan binaan keluar mengikut arahan daripada Pegawai Penguasa.	M2	20		
	4.2 KERJA PEMASANGAN LANGSIR				
	4.2.1 Kerja-kerja membekal dan memasang trek langsir jenis tugas berat (heavy duty aluminium railing), termasuk semua aksesori kelengkapan seperti roller, bracket, end cap termasuk segala peralatan dan kelengkapan yang berkaitan serta mengikut spesifikasi dan arahan Pegawai Penguasa.	M	15		
	4.2.2 Kerja-kerja membekal, menjahit dan memasang langsir daripada fabrik tebal dari jenis fabrik premium (Jacquard), tahan lasak dan tidak mudah pudar termasuk segala kelengkapan yang berkaitan serta mengikut spesifikasi dan arahan Pegawai Penguasa.	M2	45		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
5.0	**KERJA PEMBAIKAN LALUAN OKU SEDIADA**				
	5.1 Kerja- kerja membaiki struktur *ramp* (landasan) dengan kecerunan yang landai , mematuhi nisbah 1:12 atau kurang daripada 1:10 (mengikut keperluan di tapak) termasuk membuka,meruntuh dan membuang permukaan laluan sedia ada yang rosak, retak atau tidak rata dan menggantikannya dengan binaan baharu termasuk peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	Pukal			
	5.2 Kerja- kerja membuka dan membuang susur tangan (*handrail*) lama, membekal dan memasang susur tangan (*handrail*) yang baru dari jenis *stainless steel* dengan ketinggian antara 840mm – 900mm di kedua-dua sisi laluan termasuk peralatan dan kelengkapan yang berkaitan serta membawa sisa bahan keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	M	10		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
6.0	**KERJA PEMBAIKAN TEMPAT WUDUK**				
	6.1 Kerja- kerja mengganti,membekal dan memasang 'ablution tap' bersadur 'chrome' lengkap dengan segala aksesori termasuk segala kelengkapan berkaitan serta peralatan dan kelengkapan yang berkaitan serta mengikut spesifikasi dan arahan Pegawai Penguasa.	Bil	8		
	6.2 Kerja-kerja membina baru tempat duduk ambil wuduk untuk lelaki dengan menggunakan konkrit atau batu bata termasuk kerja pemasangan jubin dengan segala aksesori termasuk segala serta peralatan dan kelengkapan yang berkaitan serta mengikut spesifikasi dan arahan Pegawai Penguasa.	Bil	2		
	6.3 Kerja-kerja pemasangan jubin baru di tempat wuduk perempuan yang sediada dengan segala aksesori termasuk segala kelengkapan berkaitan serta yang berkaitan serta mengikut spesifikasi dan arahan Pegawai Penguasa.	Bil	3		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
7.0	**KERJA CAT PINTU MASUK UTAMA**				
	7.1 Kerja-kerja membasuh, menggosok atau mengikis dan sebagainya , menyediakan permukaan dan sapukan lapisan cat minyak pada pintu pagar utama dan railing tembok serta lain-lain kerja berkaitan mengikut arahan pegawai penguasa	m2	35		
	7.3 Kerja-kerja membasuh, menggosok atau mengikis dan sebagainya termasuk pada mana-mana permukaan yang rosak perlu dibaiki, menyediakan permukaan dan sapukan sebanyak 1 lapisan cat asas (undercoat) pada permukaan berlepa pada bahagian dinding luaran dan dalam serta lain-lain kerja berkaitan mengikut arahan pegawai penguasa	m2	40		
	7.4 Kerja-kerja mengecat keseluruhan permukaan dinding bahagian luaran dengan sapuan 2 lapis menggunakan cat jenis tahan rintangan cuaca (wheathershield) dengan jaminan 5 tahun ketahanan cat dari syarikat pengeluar cat yang diluluskan pada keseluruhan bahagian luaran bangunan dan lain-lain yang berkaitan seperti yang diarahkan oleh pegawai penguasa.	m2	40		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut.				
8.0	**KERJA PEMBINAAN AWNING BARU**				
	8.1 Kerja - kerja membuka binaan awning lama termasuk membuang sisa keluar dari tapak bina mengikut spesifikasi dan arahan Pegawai Penguasa.	Pukal			
	8.2 Kerja-kerja membekal dan memasang tiang besi keluli jenis bulat (*Hollow Section*) diameter150mm , lengkap dengan struktur tapak konkrit (*footing* termasuk kerja cat anti karat pada kedudukan dan tempat yang telah diarahkan segala peralatan dan kelengkapan yang berkaitan serta mengikut spesifikasi dan arahan Pegawai Penguasa.	M	18		
	8.3 Kerja-kerja merekabentuk, membekal dan memasang kekuda bumbung besi jenis bulat (Hollow Section) termasuk kerja kemasan cat serta segala peralatan dan kelengkapan yang berkaitan serta mengikut spesifikasi dan arahan Pegawai Penguasa.	M2	60		
	8.4 Kerja-kerja membekal dan memasang penutup bumbung jenis dek logam (Metal Deck) berketebalan 0.48mm termasuk kerja kemasan dengan segala peralatan dan kelengkapan yang berkaitan serta mengikut spesifikasi dan arahan Pegawai Penguasa.	M2	60		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
9.0	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut. **KERJA PEMBINAAN MENARA PEMBESAR SUARA (*SPEAKER*) BARU** **NOTA:** **Kontraktor perlu mengemukakan cadangan shop drawing yang berkaitan bagi item kerja pembinan menara pembesar suara baru yang yelah diluluskan oleh Pegawai Yang Bertauliah / Berkelayakan (PE) serta mendapat kelulusan daripada Pegawai Penguasa sebelum kerja dijalankan di tapak.**				
	9.1 Kerja-kerja merekabentuk, membekal dan memasang tiang besi menara *speaker* menggunakan ***Mild Steel Angle Iron***, lengkap dengan kenyataan yang dinyatakan , termasuk kerja penyambungan dan segala peralatan serta kelengkapan yang berkaitan mengikut spesifikasi dan arahan Pegawai Penguasa. a) Tinggi tiang menara adalah 3 meter (9 kaki) b) Struktur tapak daripada konkrit (footing) c) Tapak pengukuh (*base plate*) keluli tebal 10 mm untuk sokongan tapak menara d) Bolt penambat (anchor bolt) e) Pendakat (mounting bracket) untuk corong *speaker* f) Tapak khas atau platform bagi pemasangan pembesar suara (speaker)	Pukal			
	9.2 Kerja-kerja membekal dan memasang kubah mini bagi melindungi pembesar suara dari hujan serta panas dengan segala peralatan dan kelengkapan yang berkaitan serta mengikut spesifikasi dan arahan pegawai penguasa.	Bil	1		
	Jumlah Dibawa Ke Belakang				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir dan separa mahir, peralatan jentera, bahan-bahan, mesin dan segala peralatan yang secukupnya bagi kerja-kerja seperti berikut. **Jumlah Kecil Dari Hadapan**				
	9.3 Kerja-kerja merekabentuk, membekal dan memasang struktur tangga akses keselamatan dari jenis (*cat ladder*) dengan sangkar keselamatan (*cage*) untuk penyelanggaraan menara, termasuk kerja penyambungan dan segala peralatan serta kelengkapan yang berkaitan mengikut spesifikasi dan arahan Pegawai Penguasa.	M	3		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir, peralatan, bahan-bahan, mesin dan segala peralatan secukupnya serta kelulusan dari EMAL JKR bagi kerja-kerja seperti berikut:				
10.0	**KERJA ELEKTRIK**				
	10.1 Kerja-kerja menanggal pendawaian dan pemasangan lama serta kekemasan termasuk mengecat dan menampal kesan pendawaian lama.	Pukal			
	10.2 Kerja-kerja mengalih kedudukan penyaman udara berkapasiti 2.5Hp seperti mengikut arahan pegawai penguasa serta mengujilari sistem dengan lengkap.	Nos	4		
11.0	**RUANG SOLAT UTAMA**				
	11.1 Pendawaian mata lampu menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan (Konduit GI).	Nos	15		
	11.2 Pendawaian mata kipas siling l/d penyambung 10A 3 hala dan cangkuk penggantung menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan. (Konduit GI)	Nos	6		
	11.3 Pendawaian mata soket alir keluar kuasa (double) l/d suis soket alir keluar 13A 3 pin terlitup logam menggunakan kabel PVC 2 x 2.5mm persegi l/d kabel perlindungan. (Konduit GI).	Nos	1		
	11.4 Pendawaian mata lampu tanda 'KELUAR' (tanpa suis) menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan (Konduit GI).	Nos	1		
	11.5 Membekal dan memasang lampu LED Downlight (Surface) 24W Daylight 6500K (11 inci)	Nos	12		
	11.6 Kipas siling saiz 1524mm jenis preasseamble (60") g.p. l/d pengatur, rod gantung, ciri-ciri pemutus penyambung bekalan dan alat-alat lengkap yang diperlukan.	Nos	6		
	11.7 Membekal dan memasang kipas lekapan dinding, 500mm (20") g.p jenis industri.	Nos	7		
	Jumlah Dibawa Ke Belakang				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir, peralatan, bahan-bahan, mesin dan segala peralatan secukupnya serta kelulusan dari EMAL JKR bagi kerja-kerja seperti berikut:				
	Jumlah Kecil Dari Hadapan				
	11.8 Membekal dan memasang Lengkapan lampu kecemasan tanda "KELUAR" jenis LED (permukaan) berkapasiti 3 jam dan bateri jenis nickel cadmium jenis kotak satu sisi.	Nos	1		
12.0	**RUANG SOLAT WANITA**				
	12.1 Pendawaian mata kipas lekapan dinding (tanpa suis) l/d ros siling menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan. (Konduit GI)	Nos	8		
	12.2 Pendawaian mata soket alir keluar kuasa (double) l/d suis soket alir keluar 13A 3 pin terlitup logam menggunakan kabel PVC 2 x 2.5mm persegi l/d kabel perlindungan. (Konduit GI).	Nos	3		
	12.3 Pendawaian mata lampu (tanpa suis) menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan (Konduit GI).	Nos	13		
	12.4 Pendawaian mata lampu kecemasan (tanpa suis) menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan (Konduit GI) dan memasang lengkapan Lampu Kecemasan lama.	Nos	1		
	12.5 Pendawaian mata lampu tanda 'KELUAR' (tanpa suis) menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan (Konduit GI).	Nos	1		
	12.6 Pendawaian mata penyaman udara sehingga 2 kuasa kuda l/d suis soket alir keluar 15A 3 pin, suis dua kutub 32A dengan lampu penunjuk menggunakan kabel 2 x 4mm persegi l/d kabel perlindungan. (Konduit GI)	Nos	3		
	12.7 Membekal dan memasang lampu LED Downlight (Surface) 18W Daylight 6500K (6 inci)	Nos	12		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

(Senarai Kuantiti Kerja adalah sementara)

BIL	BUTIRAN KERJA	UNIT	KUANTITI	KADAR (RM)	JUMLAH (RM)
	Menyediakan tenaga kerja mahir, peralatan, bahan-bahan, mesin dan segala peralatan secukupnya serta kelulusan dari EMAL JKR bagi kerja-kerja seperti berikut:				
	Jumlah Kecil Dari Hadapan				
	12.8 Membekal dan memasang Lengkapan lampu kecemasan tanda "KELUAR" jenis LED (permukaan) berkapasiti 3 jam dan bateri jenis nickel cadmium jenis kotak satu sisi.	Nos	1		
	12.9 Memasang kipas lekapan dinding lama.	Nos	8		
	12.10 Membekal dan memasang kotak logam pelekap suis terlitup logam (switch centre ; 4s x 3s) l/d tapak penggantung serta kerja yang berkaitan.	Nos	1		
13.0	**LUAR MASJID**				
	13.1 Pendawaian mata lampu (tanpa suis) menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan (Konduit GI).	Nos	10		
	13.2 Membekal dan memasang lampu 'Flood Light' 300W Solar.	Nos	1		
	13.3 Membekal dan memasang *'220V / 240V High Voltage LED Neon Flex (warm white)'* dengan aksesori serta kerja-kerja berkaitan.	m	50		
	13.4 Memasang lengkapan pendarfluor lama.	Nos	8		
	13.5 Pendawaian mata kipas lekapan dinding (tanpa suis) l/d ros siling menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan. (Konduit GI)	Nos	4		
	13.6 Memasang kipas lekapan dinding lama.	Nos	4		
14.0	**MENARA SPEAKER**				
	14.1 Membekal dan memasang '220V / 240V High Voltage Running LED Neon Flex (warm white)' dengan aksesori serta kerja-kerja berkaitan.	Lot	1		
	14.2 Pendawaian mata lampu (tanpa suis) menggunakan kabel 2 x 1.5mm persegi l/d kabel perlindungan (Konduit GI).	Nos	1		
	Jumlah Dibawa Ke Ringkasan Sebutharga				

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH, REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

RINGKASAN SEBUTHARGA

BIL	BUTIRAN KERJA	M/S	JUMLAH (RM)
1.0	**KERJA-KERJA PERMULAAN**	BQ 1 (A) - 1/1	
2.0	**KERJA PENYELENGGARAAN BUMBUNG**	BQ 2 (A) - 1/1	
3.0	**KERJA HIASAN DALAMAN**	BQ 3 (A) - 3/3	
4.0	**KERJA PEMBAHAGI RUANG SOLAT**	BQ 4 (A) - 1/1	
5.0	**KERJA PEMBAIKAN LALUAN OKU**	BQ 5 (A) - 1/1	
6.0	**KERJA PEMBAIKAN TEMPAT WUDUK**	BQ 6 (A) - 1/1	
7.0	**KERJA CAT PINTU MASUK UTAMA**	BQ 7 (A) - 1/1	
8.0	**KERJA PEMBINAAN AWNING BARU**	BQ 8 (A) - 1/1	
9.0	**KERJA PEMBINAAN MENARA PEMBESAR SUARA BARU**	BQ 9 (A) - 2/2	
10.0	**KERJA ELEKTRIKAL**	BQ10 (E) - 3/3	
JUMLAH BESAR SEBUTHARGA			

Ringgit Malaysia :

Tempoh Siap Kerja :

Tandatangan Kontraktor

….....

Cop Nama / Alamat Kontraktor

….....

No.K/P : ……..……

No.Telefon : ……..……

No.A/C Bank : ……..……

Nama Bank : ……..……

Email : ……..……

Nota : Sila lampirkan sesalinan dokumen berikut bersama Borang Sebutharga :

i. Salinan terkini Sijil SSM / Perbadanan
ii. Salinan terkini Sijil PKK (Sijil Kontraktor Kerja Taraf Bumiputera - Gred Pendaftaran G2 (Bumiputera) Awam, Gred Pendaftaran G1/G2 (Bumiputra) Elektrik
iii. Sesalinan terkini Sijil CIDB (berdaftar di Negeri Sembilan shj) :

a. Sijil Perolehan Kerja Kerajaan Gred : G2; Kategori : B (Pembinaan Bangunan) & (Kejuruteraan Awam), G1/G2, Kategori ME

b. Perakuan Pendaftaran G2; B, B04 (Kerja-kerja Pembinaan Bangunan) CE 21 (Kejuruteraan Awam) dan G1/G2 ;E04 (Pemasangan Voltan Rendah)

iv. Salinan Sijil Pendaftaran Dari Suruhanjaya Tenaga (ST)
v. Sijil pematuhan cukai (TCC) patuh.
vi. Penyata Bank 3 bulan terkini (April,Mei,Jun)
vii. Profail Syarikat Yang Berdaftar

SENARAI SEMAK
TAWARAN TEKNIKAL / KEWANGAN
(Pengesahan Penghantaran Dokumen)

SULIT
Nombor Sebutharga: PPD/400(S)5/7/10-2026

Semak dan tandakan (√) di tempat yang berkenaan dan masukkan lampiran tersebut dalam sampul tawaran yang betul mengikut turutan senarai semak.

BIL	PERKARA	STATUS	SERAHAN OLEH SYARIKAT (√)	SEMAKAN OLEH JK PEMBUKA SEBUTHARGA (√)
1.	Dokumen Spesifikasi / BQ	Mandatori		
2.	Borang Sebutharga Kerja	Mandatori		
3.	Salinan Sijil Pendaftaran Suruhanjaya Syarikat Malaysia (SSM) terkini	Mandatori		
4.	Salinan Sijil PKK (Sijil Taraf Bumiputera - Gred Pendaftaran G2 (Bumiputera)	Mandatori		
5.	Salinan Sijil PKK (Sijil Taraf Bumiputera - Gred Pendaftaran G1/G2 (Bumiputera) (Elektrik)	Mandatori		
6.	Salinan terkini Sijil CIDB (berdaftar di Negeri Sembilan shj)	Mandatori		
7.	Sijil Perolehan Kerja Kerajaan Gred : G2; Kategori : B	Mandatori		
8.	Sijil Perolehan Kerja Kerajaan Gred : G1/G2; Kategori : ME	Mandatori		
9.	Perakuan Pendaftaran G2: B04 & CE21	Mandatori		
10.	Perakuan Pendaftaran G1/G2: E04	Mandatori		
11.	Salinan Sijil Pendaftaran dari Suruhanjaya Tenaga (ST)	Mandatori		
12.	Penyata Bank 3 bulan terkini (April, Mei, Jun)	Mandatori		
13.	Salinan Sijil Pematuhan Cukai (TCC) Berstatus Patuh	Mandatori		
14.	Borang Pengisytiharan Maklumat Syarikat Dalam Perolehan Kerajaan	Mandatori		
15.	Borang Pemberitahuan Pemunya Benefisial	Mandatori		

13.	Surat Akuan Syarikat Dalam Menangani Jenayah Pemerdagangan Orang Dan Buruh Paksa	Mandatori		
14	Profail Syarikat yang berdaftar	Mandatori		

Arahan:

1. Dokumen perlu diisi dengan lengkap.
2. Setiap dokumen hendaklah ditandatangan dan dicop oleh penyebutharga.
3. Sila kepilkan senarai semak ini bersama dokumen sebutharga.

PERAKUAN:

PENYEBUTHARGA: *(Diisi oleh Penyebutharga)*	**JAWATANKUASA PEMBUKA SEBUTHARGA** *(Diisi oleh Jawatankuasa Pembuka Sebutharga)*
Dengan ini saya mengesahkan bahawa saya telah membaca dan memahami semua syarta-syarat dan terma yang dinyatakan dalam dokumen sebutharga PPD/400(S)5/7/10-2026. Semua maklumat yang dikemukakan di didalam cadangan tawaran ini adalah benar. …… Nama: No. Kad Pengenalan: Cop Syarikat:	Jawatankuasa Pembuka Sebutharga mengesahkan penerimaan dokumen seperti yang ditandakan. Nama : Jawatan : Tarikh : Tandatangan : Nama : Jawatan : Tarikh : Tandatangan : Nama : Jawatan : Tarikh : Tandatangan : Nama : Jawatan : Tarikh : Tandatangan :

POLITEKNIK PORT DICKSON
KEMENTERIAN PENDIDIKAN TINGGI

KERJA-KERJA PENYELENGGARAAN DAN PEMBAIKAN MASJID KAMPUNG PEDAS TENGAH , REMBAU, NEGERI SEMBILAN DARUL KHUSUS.

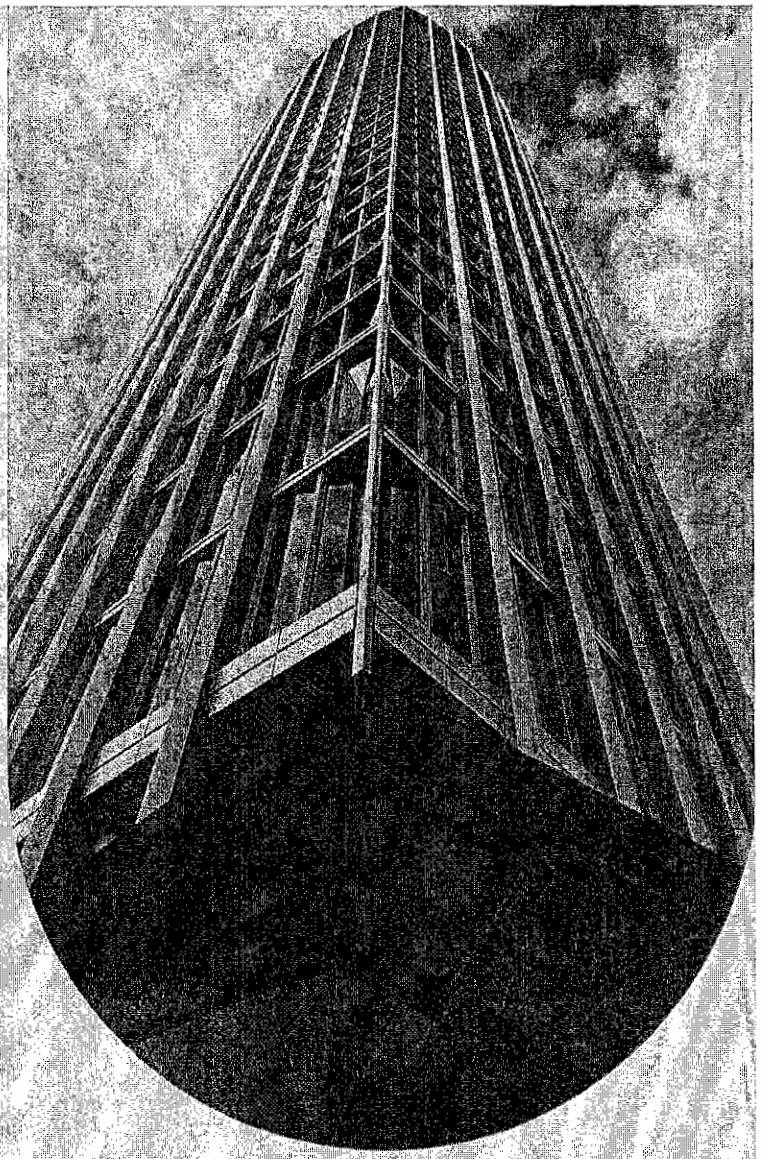
HARGA INDIKATIF JABATAN: RM376,000.00

Harga Indikatif Jabatan ini merupakan suatu anggaran sahaja dan amaun tersebut tidak mengikat Kerajaan atau mana-mana pihak lain juga bagi maksud mengelakkan kekeliruan yang mungkin berbangkit.

Pihak Kerajaan tidak menjamin bahawa syarikat akan dipilih atau boleh menyiapkan kerja dengan bersandarkan Harga Indikatif Jabatan.

Pengarah,
Politeknik Port Dickson
Kementerian Pendidikan Tinggi

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STANDARD SPECIFICATIONS FOR BUILDING WORKS 2025

JABATAN KERJA RAYA MALAYSIA

1. General

1.1. Unless otherwise specified or shown on the Drawings, all ceilings for internal use shall be a range of gypsum plasterboards or as approved by the S.O. with class 'O' fire rating and all ceiling installations shall comply with the classification of fire spread as stipulated in the 8th Schedule Uniform Building By-Law 1984.

1.2. All concealed ceilings shall be provided with dedicated service access to the ceiling void for maintenance of services above the ceiling space in accordance with the Drawings and approval of the S.O..

1.3. All sprinkler heads (drops) shall have a 12.5mm diameter oversize ring, sleeve or adaptor through the ceiling tile to allow for free movement of the sprinkler pipes. It shall also comply with the local fire regulations and to the S.O.'s approval.

1.4. The ceiling installation shall not commence works until the building is effectively weather-tight and the work area of wet trades has been completed and dried.

2. Acoustic Requirements

2.1. Acoustic requirements specified or shown on the Drawings, such as sound absorption, sound insulation (against air-borne and impact noise) shall be tested in accordance with BS EN 13964, BS EN ISO 10140, BS EN ISO 354[WTH1] or other acceptable standards.

2.2. A full test report shall be submitted to the S.O. as proof of compliance. It shall relate to the entire specified system. Any variations shall be endorsed by the test laboratory or field testing. Test reports, comments and the testing authority shall be stated in the manufacturer's trade literature or be made available upon request or both.

2.3. All acoustic ceilings shall be of proprietary system using mineral fibre boards or spray applied cellulose on ceiling and/or soffit of slab as approved by the S.O. and conforms to class 'O' fire rating classification comply with BS 476 Part 6 & Part 7.

3. Materials and Ceiling Components

3.1. Zinc-Coated and Aluminium/Zinc Coated Steel

Zinc-coated and aluminium/zinc-coated steel used for the construction of suspended ceiling components shall comply with MS 1196 or other equivalent Standards. The Contractor shall provide proof of compliance to the approval of the S.O.. Where sections have been cut from zinc-coated or aluminium/zinc-coated sheets, the cut edges shall be treated with protective anti-rust paint to prevent corrosion. All pre-painted finish for ceilings shall be as specified under SECTION G: ROOFING.

3.2. Linear Strip Ceiling

Unless otherwise specified or shown on the Drawings, linear strip ceiling shall be aluminium pre-painted anodized, consisting of 150mm width x 12.5mm deep x 0.6mm thick panel fixed in accordance with manufacturer's recommendation and to S.O.'s approval.

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3.3. Plasterboard

3.3.1. All plasterboards dimensions, its tolerances and flexural breaking load shall comply with BS EN 520. The board shall carry class 'O' approval from JBPM.

3.3.2. Unless otherwise specified in the Drawings the size for plasterboard ceiling shall be 600mm x 600mm x 9mm thick min. and shall be suspended from the soffit with adjustable hanger rods in accordance with the manufacturer's recommendation and S.O..'s approval.

3.4. Plasterboard with improved core adhesion at high temperature (Type F)

The type of board and test requirements shall be in accordance with BS EN 520, and to the approval of the S.O.. The board shall carry Class 'O' approval from JBPM.

3.5. Plasterboard with reduced water absorption (Type H)

The types of moisture resistance board to receive paint finish shall be in accordance with BS EN 520 and to the approval of the S.O.. The board shall carry Class 'O' approval from JBPM.

3.6. Mineral Fibre Boards

3.6.1. Unless otherwise specified, the board size shall be 600mm x 1200mm x 15mm thick sq. edges. The board shall carry Class 'O' approval from the JBPM and the requirement of sag resistance shall be minimum of RH95 and above.

3.6.2. Mineral Fibre Board shall have a requirement of Noise Reduction Coefficient (NRC) rating minimum of 0.70.

3.6.3. Surface coating of the board shall be applied with vinyl latex paint in white colour at the factory and the surface design/texture of the board shall be to S.O.'s approval.

3.7. Fibre Cement Ceiling Panel

Fibre cement ceiling panel shall be asbestos free and shall be an autoclaved cellulose fibre cement flat board. Thickness must be minimum 3.2mm, 4.5mm and 6mm (internal) and 6mm, 9mm for (external). The basic composition of the panel should consist of cement, refined sand and cellulose fibre. The material shall be classified as Class O in accordance with BS476 Part 4, or Part 6 and Part 7 requirements (fire-listed) under SIRIM QAS fire listing scheme.

3.8. Acoustic Glass Wool Ceiling Panel

Acoustic glass wool ceiling panel shall be lightweight fibre glass wool material with high acoustical sound absorption of NRC: 0.90-1.00 (ASTMC 423). Unless otherwise specified the size of the panel shall be 600mm x 1200mm x 20mm thick, sq. edge fixed to aluminium tee exposed grid systems, suspended from the soffit with adjustable hanger rods in accordance with manufacturer's recommendation and S.O.'s approval.

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3.9. Glass Fibre Reinforced Gypsum (GRG)

3.9.1. GRG Boards are manufactured by glass fibre reinforced gypsum and consist of non-combustible high-grade gypsum casting plaster with glass fibre membranes. Unless otherwise specified minimum sizes shall be 1200mm X 900mm x 9mm thick. The board shall conform to the following:

Fire performance : GRG Boards are rated non-combustible as defined in BS 476: Part 4.

Dry Density : Approx. 1660kg/m²

3.9.2. GRG boards shall be installed in accordance with the manufacturer's recommendation and to S.O.'s approval.

3.10. Cornice

3.10.1. Unless otherwise specified, cornice shall be provided of the same ceiling material for all plaster ceiling materials.

3.10.2. Cornice shall be fixed to the walls and ceiling using proprietary adhesive or as recommended by the manufacturer and approved by the S.O..

3.10.3. Large cornices shall be fixed using screws together with cornice adhesive as recommended by the cornice manufacturer and to S.O.'s approval.

3.10.4. Cornice should be carried and handled carefully to avoid cracking the core or wrinkling the paper liner. Where possible, the Contractor shall use full lengths of cornice and mitre all joints.

3.10.5. The Contractor shall ensure accurate and level placement by marking ceilings and walls with a line at the cornice edge.

3.10.6. Cornice with shorter length shall be installed first followed by the longer lengths by bowing out to spring mitres fit into place.

3.11. Reinforcing/Jointing Tape

The tape shall not be less than 50mm width paper tape in accordance with ASTM C475 from an approved manufacturer and to S.O.'s approval.

3.12. Jointing Compound

Jointing compound shall be of setting type or pre-mixed multi-purpose gypsum based air drying type compound, in accordance with BS EN 13963 and to the approval of the S.O..

3.13. Sealants

The application of fire sealant for plasterboard with improved core adhesion at high temperature (Type F) and wet area sealant for plasterboard with reduced water absorption (Type H) shall be in accordance with BS 8212 and to the approval of the S.O.. The appropriate type of sealant shall be used for the required type of plasterboard. Elastomeric sealants can be used at the perimeter of the dry lining or partitioning to provide an airtight construction and to the approval of the S.O..

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3.14. Control Joint

Unless otherwise specified, control joints shall be provided in a long continuous run of ceiling, spaced at not more than 12m centres maximum and recommended by the manufacturer and to the approval of the S.O..

3.15. Anchors and Fasteners

3.15.1. The Contractor shall submit the details of the proposed proprietary anchor to the S.O. for approval.

3.15.2. Notwithstanding the above, the alternative anchor proposed shall be made of carbon steel galvanised to minimum thickness of 5 µm or stainless steel in accordance with European Technical Approval Guideline ETAG 001 Metal Anchors for Use in Concrete.

3.15.3. The size of the anchor fixing shall not be less than 6mm diameter (M6) with effective anchorage depth of not less than 30mm measured from the soffit of the floor slab. The hole for the anchor shall be drilled using a drill bit of corresponding size to the proprietary anchor. The design resistance in all load directions shall not be less than 1.10kN.

3.15.4. Shot-fired (hybrid-pin) alternative anchors shall not be used to install the suspended ceiling hangers to the concrete soffit. Screws with nylon wing plugs shall not be used as ceiling anchors to install the suspended ceilings.

3.15.5. Fasteners shall have a corrosion-resistant finish and be appropriate for intended use, in accordance with BS EN 14566. The heads of fasteners shall be shaped so that they can be driven slightly below the surface of the plasterboard without punching through the paper liner.

3.16. Acoustical Cellulose Insulation

3.16.1. Spray Applied Acoustical Cellulose Insulation on ceiling and/or soffit of slab shall be:

3.16.1.1 Thickness – minimum 30mm

3.16.1.2 Thermal conductivity (k-value) = 0.0029 W/mK tested to ASTM C-177.

3.16.1.3 Fire retardant Class "O" complying with BS476 Part 6 & 7 and endorsed by JBPM.

3.16.1.4 Average moisture absorption of not more than 15% as per ASTM C739.

3.16.1.5 Tested Noise Reduction Coefficient of minimum NRC 0.75 at 30mm thickness.

3.16.1.6 Tested to be non-toxic and asbestos free, contain no carcinogenic materials and shall not cause any skin irritation to humans

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3.16.2. Where required, appropriate surface preparation and treatment should be done on the surface of the substrate according to manufacturer's recommendation.

3.16.3. The application of cellulose insulation shall be applied strictly to manufacturer's method statement and to S.O.'s approval.

4. Ceiling Suspension System

4.1. General

4.1.1. Batten systems (furring channels) as vertical ceiling hangers shall not be allowed for the installation of proprietary ceiling systems.

4.1.2. Where grid ceiling suspension systems are installed exposed to wind condition (outside building), all lay-in ceiling panels/boards shall be secured to the suspension system with minimum two proprietary `hold-down clip' for each tile as recommended by the manufacturer and approved by the S.O..

4.1.3. Only proprietary adjustable butterfly type locking clips (rod joiner) shall be used with a minimum thickness of 0.48mm and galvanised coating mass of minimum 80g/sq. m. The locking clips shall be of min. steel grade SK-5 or approved equivalent with a minimum pull off strength of 110kgs.

4.2. Fixed Ceiling System

4.2.1. Timber framing or metal framing system shall be designed and installed to support the fixed ceiling panels/boards on the external or outside space of the building as shown on the Drawings. All external ceilings shall use fixed ceiling system.

4.2.2. All timber materials used shall be treated and as specified under SECTION I: TIMBER, JOINERY AND IRONMONGERY. Unless otherwise specified, ceiling boards fixed to the timber frames shall be with butt 'V' joint using nails or screws as recommended by the ceiling manufacturer and to S.O.'s approval.

4.2.3. Where conceal ceilings are used, all ceiling panels/boards fixed to the metal frames shall be screwed permanently to the metal framing system as recommended by the ceiling manufacturer and to S.O.'s approval.

4.2.4. All screw fixings of the ceiling panel/boards to the framing system shall be completely sealed to match with the ceiling surface. All external ceilings shall be painted with weather resistant paint as specified under SECTION N: PAINTING.

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4.3. Grid Ceiling Suspension System

4.3.1. Vertical Suspension Members

4.3.1.1. Ceiling hangers shall be galvanised mild steel machine straightened hanger rods of minimum 4mm diameter consisting of two pieces length with a galvanization thickness of minimum 80g/sq. m. and tensile strength of minimum 350MPa. held together by a galvanised rod joiner (adjustable type galvanised locking clips). Only proprietary adjustable locking clips (butterfly type) shall be used as a rod joiner.

4.3.1.2. Proprietary anchor fixing shall not be less than 6mm diameter (M6) with effective anchorage depth of not less than 30mm measured from the soffit of the floor slab. The hole for the anchor shall be drilled using a drill bit of corresponding size to the anchor. The proprietary anchor is fixed to the structural soffit at a distance 200mm away from the wall and then spaced equal to or not more than 1200mm centre to centre (c/c) to form the grid of the ceiling hanger.

4.3.1.3. One end of the hanger shall be attached to a pre-drilled G300 steel grade with AZ150 zinc aluminium alloy L-shaped soffit cleat 60mm x 20mm x 25mm (width) and minimum base metal thickness of 1.15mm with a galvanization thickness of minimum 80g/sq. m. for suspending the pre-straightened hanger rod. The other end of the hanger shall be secured using proprietary locking clips to the primary T-section. The T-sections shall be fixed accordingly to the required ceiling level by adjusting the length of the ceiling hanger through the rod joiner. Alternatively, zinc coated M6 x 60mm fisheye anchor may be considered at soffit.

4.3.1.4. One end of the pre-straightened hanger rod shall be hooked to the pre-drilled soffit cleat and the other end of the hanger shall be secured to the primary T-section using proprietary locking clips. The T-sections shall be fixed accordingly to the required ceiling level by adjusting the length of the ceiling hanger through the rod joiner.

4.3.1.5. The proprietary adjustable locking clips (butterfly type rod joiner) shall be 0.5mm minimum thickness with galvanised coating mass of minimum 80g/sq. m. The locking clips shall be of minimum steel grade SK-5 and with a minimum pull off strength of 110kgs.

4.3.2. Horizontal Suspension Members

4.3.2.1. The T-grid system shall be manufactured to a minimum 24mm width x 30mm height T-section rigidized (rotary stitching) on all T-sections and with a load carrying capacity of minimum 20kgs/m² per ASTM C635. All T-sections shall be in pre-painted white or powder coated colour white. Installation shall refer to the manufacturer's method statement.

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4.3.2.2. Perimeter wall angles shall be securely fixed to the adjacent perimeter walls using appropriate fixings forming part of the grid ceiling system as recommended by the manufacturer and approved by the S.O..

4.4. Concealed Ceiling Suspension System (Soffit-ceiling distance < 1800mm)

Unless otherwise shown on the Drawings and when the distance between the concrete soffit and the suspended ceiling board is less than 1800mm in vertical height, the concealed ceiling suspension system shall be as follows:

4.4.1. Vertical Suspension Members

4.4.1.1. Ceiling hangers shall be rigidized galvanised mild steel 25mm x 25mm angle section with 0.5mm base metal thickness or galvanised mild steel machine straightened hanger rods of minimum 4mm diameter with a galvanization thickness of minimum 80g/sq. m. and tensile strength of minimum 350MPa. The rod shall be in 2 pieces and should be used in conjunction with the adjustable suspension (butterfly type) clip/rod joiner. Levelling of the ceiling shall be executed in accordance with the manufacturer's method statement.

4.4.1.2. Proprietary anchor fixing shall not be less than 6mm diameter (M6 or ¼") with effective anchorage depth of not less than 30mm measured from the soffit of the floor slab. The hole for the anchor shall be drilled using a drill bit of corresponding size to the anchor. The proprietary anchor shall be fixed to the structural soffit at a distance 200mm away from the wall and then spaced equal to or not more than 1000mm c/c to form the grid of the ceiling hanger.

4.4.1.3. Where hanger rods are used, one end of the hanger rod shall be attached to a pre-drilled G300 steel grade with AZ150 zinc aluminium alloy L-shaped soffit cleat 60mm x 20mm x 25mm (width) and minimum base metal thickness of 1.15mm. Alternatively, zinc coated M6 x 60mm fisheye anchors may be considered at soffit. The other end of the hanger shall be secured using proprietary locking clips to the primary channel (main runners).

4.4.1.4. Where mild steel angle sections are used as ceiling hangers, one end of the ceiling hanger shall be connected to the pre-drilled proprietary anchor fastener to the soffit slab. The other end of the hanger shall be secured using proprietary locking clips or suspension brackets to the primary channel (main runners).

4.4.2. Horizontal Members

4.4.2.1. Primary rigidized galvanised steel channel (main runners) shall be 34mm x 12mm x 0.4mm minimum BMT at a distance of 100mm away from the wall and spaced equal to or not more than 1000mm c/c (the minimum thickness may vary according to the profile with larger cross section values with appropriate justification from manufacturer). Installation shall refer to the manufacturer's method statement.

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4.4.2.2. Secondary rigidized galvanised steel channel 34mm x 12mm x 0.4mm minimum BMT shall be secured using proprietary locking clips or suspension brackets to the primary channel.

4.4.2.3. The primary and secondary channels shall be connected using galvanised proprietary locking clips or suspension brackets with minimum thickness of 0.5mm (the minimum thickness may vary according to the profile with larger cross section values with appropriate justification from manufacturer) and screwed as recommended by the manufacturer. And no tilting movements are allowed on the primary channel once secured with locking clips.

4.4.2.4. Unless otherwise specified, a single layer 9mm thick gypsum board ceiling shall be screwed using approved drywall screw minimum (3.5mm Ø) x 25mm length fixed at maximum distance of 200mm c/c to the secondary channel as recommended by the manufacturer.

4.5. Concealed Ceiling Suspension System (Floor-ceiling distance > 1800mm)

Unless otherwise shown on the drawings or when the distance between the concrete soffit and the suspended ceiling board exceeds 1800mm in vertical height, the concealed ceiling suspension system shall be as follows:

4.5.1. Vertical suspension members

4.5.1.1. Ceiling hanger system shall be galvanised mild steel threaded rods of not less than 6mm diameter.

4.5.1.2. Fixing of vertical suspension hangers to soffit slab shall be by using threaded rod and proprietary anchor (drop in anchor or equivalent). Identify the actual location of the suspended point on Site, mark the position for drilling, the position should be no more than 100mm away from the perimeter wall, drilling at least 28mm depth. Insert corresponding diameter drop-in anchor or equivalent, for best result hammer the "pin" slightly inside the drop-in-anchor. Cut threaded rod to require suspension length and screw fix the threaded rod into the corresponding diameter drop-in-anchor or equivalent. Slightly pull the threaded rod to check the fixing.

4.5.1.3. One end of the threaded ceiling hanger rod shall be connected to the pre-drilled anchor fastener (drop-in anchors or equivalent) and the other end of the threaded rod shall be secured to the proprietary locking clips or suspension brackets with two M6 nuts and locked to the primary channel (main runners).

4.5.2. Horizontal Members

4.5.2.1. Primary channel shall be galvanised steel 38mm x 12mm x 1mm thick minimum placed at a distance of 100mm away from the wall and spaced equal to or not more than 1000mm c/c. The primary channel shall have the characteristic strength of at least 250N/mm². Installation shall refer to manufacturer's method statement.

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4.5.2.2. The dimension of the secondary channel shall be at not less than 50mm x 20mm x 0.5mm thick minimum place at 450mm c/c minimum for 9mm thickness board and 600mm c/c minimum for 12mm thickness board. The secondary channel shall have the characteristic strength of at least 250N/mm².

4.5.2.3. The primary and secondary channel shall be connected using galvanize proprietary locking clip with minimum thickness of 0.5mm (the thickness may vary according to the profile with larger cross section values with appropriate justification from manufacturer) and screw as recommended by the manufacturer.

4.5.2.4. Unless otherwise specified, a single layer 9mm thick minimum plasterboard ceiling shall be screwed using approved drywall screw minimum (3.5mm Ø) x 25mm length fixed at maximum 200mm c/c to the secondary channel as recommended by the manufacturer.

4.6. Performance and Installation Requirements

4.6.1. Suspended ceiling systems are not designed for bearing additional weight and shall not be regarded as structural elements. Electrical wiring systems, including cable trays, conduits, junction boxes, lighting fixtures, air-conditioning ducts, air diffusers and other appurtenances shall not be placed directly on the ceiling and shall be independently supported and independently braced from the structure.

4.6.2. Suspended ceilings shall be designed to ensure that detrimental levels of water and condensation are not formed within or on the surfaces of the ceiling and related components and the ceilings shall be designed according to Class C conditions of BS EN 13964.

4.6.3. Other steel components of the substructure such as supporting member, perimeter trim, etc. shall have a characteristic strength of at least 250N/mm² and their tolerances shall comply with BS EN 13964. No bends or notches or drilling or other alterations from its original state are allowed on steel components unless allowed by the manufacturer.

4.6.4. Where not specified, tolerances for the ceiling shall comply with BS EN 13964. The maximum deflection between two suspension points shall not exceed L/500 where L is the suspension distance between the two points.

4.6.5. The top fixing of all suspension components shall be made to the primary structural framing element, unless specifically designed otherwise. The Contractor shall ensure the fixings are of a corrosion-resistant material suitable for the intended application, and fixings shall be compatible with the material of the structure to which they are to be fitted.

4.7. Structural Steel Fixing

4.7.1. Self-drilling screws are not allowed for structural steel, unless specifically designed otherwise. These screws shall not be placed in tension unless specifically designed for that purpose.

4.7.2. Penetrations made into the structural steel by drilling shall be duly approved by the S.O..

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4.7.3. Clips shall be installed strictly in accordance with the manufacturer's recommendations.

4.8. Cold Formed Truss/Timber Truss Fixing

4.8.1. Suspended ceiling system fixings to cold formed trusses shall only be allowed by using steel plate straps. For the case of proprietary truss systems, the Contractor shall obtain written approval from the Truss System Provider and the S.O..

4.8.2. Fixings to timber joists shall be made into the side of the timber, with five times the diameter of the fastener clear edge distances.

4.9. Glued Laminated Timber Fixing

Top fixing to glued laminated timber members shall only be allowed with the approval of a P.E. The glued laminated timber shall be fabricated as specified under SECTION I: TIMBER, JOINERY AND IRONMONGERY.

4.10. Concrete Fixing

4.10.1. Shot-fired fasteners are not allowed to be installed directly to a concrete flat roof slab. Separate structural framing elements for ceiling fixing shall be specifically designed if required and it shall be approved by the S.O..

4.10.2. Fixing to aerated/lightweight concrete shall only be made in accordance with the manufacturer's recommendations.

4.11. Purlin fixing

4.11.1. Fixings shall be made of steel plate straps. No connections requiring drillings to the web/lip of the purlins are allowed, unless specifically designed otherwise.

4.11.2. Where flange connections are necessary, they should be made as close as possible to the web of the purlin, and design calculations shall be provided to ensure the structural capacity of the purlin is not compromised.

4.11.3. Fixings shall be selected and installed in accordance with the manufacturer's specification and approved by the S.O..

4.12. All concrete expansion bolts shall be installed in accordance with the manufacturer's recommendations taking due care to maintain minimum edge distances, spacing and embedment depth.

4.13. Ceiling hangers shall be installed in accordance with the ceiling system manufacturer's recommendation. Bends as means of levelling the ceiling or to avoid plenum services, shall not be made in the ceiling hangers. Where ceiling hangers cannot be secured at the specified spacing, secondary members shall be installed to manufacturer's recommendation.

4.14. In areas where the suspended ceiling is adjacent to rooms or areas with 24 hours air-conditioning and the concrete soffits are applied with PU foam, the ceiling suspension hanger shall be secured to the concrete soffit using M6 x 30mm A4 stainless steel (DIN17440) anchor bolts as specified or shown on the Drawings.

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4.15. Unless otherwise shown on the Drawings, plasterboard partitions shall be fixed to the primary framing members of the ceiling suspension system in accordance with BS 8212.

4.16. Suspended Ceiling Exposed to Wind (Outside Building).

4.16.1. Wind Load

4.16.1.1. The minimum basic wind speed shall be 35 m/s. However, the minimum basic wind speed shall be increased to 41 m/s for lightweight covering.

4.16.1.2. The requirement of wind load shall be as stated in the MS 1553 – Code of Practice on Wind Loading for Building Structures. The minimum basic wind speed shall be as specified above or as per the value stated in MS 1553 whichever higher.

4.16.1.3. Load combinations shall be clearly identified (as per MS EN 1993 Part 1 to Part 3 or other equivalent standards recognised internationally) and itemised to enable design checking to be carried out upon the most adverse conditions or the effect (e.g. effect of uplift) under consideration.

4.16.1.4. Where the grid ceilings system is installed to areas exposed to wind condition (outside buildings), all lay-in ceiling panels/boards shall be secured to the suspension system with min. two proprietary `hold-down clip' for each tile as recommended by the manufacturer and approved by the S.O.. Installation shall refer to the manufacturer's method statement.

4.17. Testing and Inspection

4.17.1. The Contractor shall carry out in-situ Pull-Out Test for the complete ceiling suspension (hanger) system inclusive of the rod joiner and the anchors. The sampling rate shall be five (5) samples for every 200 number of hangers installed and the points of testing shall be carried out subject to S.O..'s approval.

4.17.2. The minimum load for the pull-out test shall be 0.5 kN applied to each complete ceiling suspension sample inclusive of rod joiner where applicable. The test sample shall be left for the duration of minimum 8 hours and the observation shall be recorded and submitted to the S.O. for approval.

4.17.3. The Contractor shall inform the S.O. in writing to request for inspection and approval prior to closing up of the ceiling suspension system with ceiling panels.

4.18. 24 Hours Air Conditioning Rooms

All ceiling for 24 hours air conditioning rooms shall made from soffit and apply with spray a layer Polyurethane Spray Foam Insulation System with K-value ≤ 0.0272 W/(m°K), zero Formaldehyde and VOC's content ≤17.67g/L. to wall and under the soffit of the floor slab. Minimum 50mm thick and extended at least 1.5m all around. Top most floor which allocates AHU room shall have soffit ceiling with skim coat.

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4.19. Warranty

4.19.1. When a proprietary ceiling system is used, the Contractor shall submit to the S.O. a warranty from the manufacturer with the following provisions:

4.19.1.1 The products used are genuine and free from manufacturing defects;

4.19.1.2 The complete ceiling suspension (hanger) system are installed in accordance with the manufacturer's method statement, recommendation, guidance and specifications that will deliver the specified level of performance;

4.19.1.3 The warranty certificate shall cover a period of 10 years from the date of Certificate of Practical Completion against any defect or failure due to the installation and workmanship by the manufacturer's registered panel installer.

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1. General

1.1. Unless otherwise stated, the pitch and batten gauge for each type of roof covering shall be strictly in accordance with the manufacturer's recommendation.

1.2. Unless otherwise approved, all roof covering pieces or accessories such as eaves, hips, ridges, valley etc., shall be of the same material as the general covering.

1.3 Use of plastic or polyurethane foam (PU foam) based insulation shall be prohibited due to health hazards. PU foam-based insulation releases toxic substances when heated and burned

1.4 Heat insulation material used shall be non-combustible under BS 476 Part 4 or EN13501-1 Class A1.

2. Interlocking Concrete Tiles

2.1. Interlocking concrete roof tiles shall be laid on timber or steel battens approved for roofing at spacing and tightly nailed or screwed as recommended by the manufacturer.

2.2. Unless otherwise specified, the concrete roof tiles shall be laid to slope in accordance with the manufacturer's recommended pitch and to the S.O. 's approval. The roof tiles shall conform to MS797 and unless otherwise specified on the drawings, it shall be laid on metal trusses system to engineer's detail and to the S.O.'s approval.

2.3. Water repellent materials backed with weatherproof self-adhesive compound for ridges and hips solution laid in accordance with manufacturer's instruction.

2.4. Verges, ridges, hips, valley tiles and complete with all roofing accessories shall be provided and laid to bond with the general roof tiling works in accordance with the manufacturer's recommendation.

2.5. Unless otherwise stated in the Drawings, where skylight roofing are to be used, they shall comply with UBBL 1984. The minimum thickness gauge and fixing system of the skylight roofing sheets is in accordance with the manufacturer's recommendation.

3. Clay Tiles

3.1. Unless otherwise stated in the Drawings, clay tiles shall be of 425mm to 490mm (length) x 280mm to 300mm (horizontal width) pattern conforming to BS 402 or SS 70 and shall be free from cracks, chips and warps.

3.2. Clay tiles shall be laid with a minimum head lap of 75mm to 95mm on timber or steel battens approved for roofing at spacing as recommended by the tile manufacturer. The tiles shall be firmly screwed or nailed at intervals as recommended by the roofing tile manufacturer and as approved by the S.O..

3.3. Ridge capping, hip and valley tiles complete with all roofing accessories shall be provided to match the general tiling works in accordance with the manufacturer's recommendation. All these shall be bedded in matching water repellent materials backed with weatherproof self-adhesive compound.

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3.4. Roofing components at roof eave to allow airflow and prevent the entry of birds and vermin into the batten cavity is recommended.

3.5. Unless otherwise stated in the Drawings, where skylight roofing are to be used, they shall comply with UBBL 1984. The minimum thickness gauge and fixing system of the skylight roofing sheets is in accordance with the manufacturer's recommendation.

4. Pre-painted Aluminium Roofing Sheet

4.1. Unless otherwise stated, where aluminium roofing sheets are to be used, they shall be of the type, gauge and finish as shown in the drawings and to be fixed strictly in accordance with the manufacturer's recommendation.

4.2. Unless otherwise stated in the Drawings, where skylight roofing are to be used, they shall comply with UBBL 1984.

5. Concrete Flat Roofs

5.1. Concrete flat roofs shall be as specified under SECTION E: CONCRETING.

5.2. To apply one (1) coat elastomeric breathable acrylic copolymer liquid followed by another two (2) coats of same water proofing with flexible UV resistant liquid applied membrane, reinforced with approved fibre mesh in between the coats.

5.3. Upturn 300mm including 25mm angle filler at every edge of the parapet wall. Every rainwater down pipe (RWDP) to be treated with polyurethane sealant.

5.4. Unless otherwise stated, waterproofing system required to be protected with minimum 50mm thick cement sand all in accordance to manufacturer's specification and instruction.

6. Pre-painted Steel Roofing Sheet

6.1. Unless otherwise stated, the metal roof decks shall comply with the following:

6.1.1. Materials

6.1.1.1. The roofing sheets shall with 55% aluminium, 43.5% zinc and 1.5% silicon or be produced from aluminium/zinc/magnesium alloy coated steel conforming to MS 2657 and AS1397 with 55% aluminium, 41.5% zinc, 2% magnesium and 1.5% silicon.

6.1.1.2. The pre-painted finish over the aluminium/zinc alloy coated base steel or aluminium/zinc/magnesium alloy coated base steel shall conform to MS 2383 with at least 1000 hours of Cyclic Corrosion Test (CCT) to meet ISO 9223 Category 3 (C3) environment.

6.1.1.3. The exterior finish coat shall have a nominal dry film thickness of 20µm over 5µm thick corrosion inhibitive primer on top side or weather side. The backing coat shall be with nominal dry film thickness of 5µm Shadow Grey over 5 µm corrosion inhibitive primer.

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6.1.1.4. Minimum steel yield strength shall be 300 or 550MPa.

6.1.1.5. The minimum aluminium/zinc alloy coating mass shall be 150g/m² (Coating Class AZ 150) or aluminium/zinc/magnesium alloy coating mass of 150g/m² (Coating Class AM150) on both surfaces.

6.1.1.6. The Contractor shall submit material warranty from the Material warranty shall be up to 30 years against perforation by corrosion, 15 years against flake and peel, 12 years against colour fading and 5 years against dirt staining for the project Site within ISO 9223 Category 3 (C3) environment or at least 1km from the atmospheric corrosive influence environment.

6.1.1.7. Unless otherwise stated in the Drawings, where skylight roofing are to be used, they shall comply with UBBL 1984. The minimum thickness gauge and fixing system of the skylight roofing sheets is in accordance with the manufacturer's recommendation.

6.1.2. Metal Sheet Profiles

6.1.2.1. Unless otherwise specified or shown on the Drawings, the metal sheet profile shall be of a concealed fixing system complying with MS2500 and Perakuan Pematuhan Standard (PPS) certificate under CIDB Act. The roofing sheets shall have the following-requirements:

(i) Base Metal Thickness (BMT) = 0.42mm.

(ii) Total Coating Thickness (TCT) = 0.47mm (AZ150/AM150); 0.48mm (AZ200) *note: Total Coating Thickness (TCT) is the total thickness before paint.

(iii) After Painted Thickness (APT) = 0.50mm (AZ150/AM150); 0.51mm (AZ200) *note: After Painted Thickness (APT) is the total thickness after paint.

(iv) Cover width = 200mm to 980mm.

(v) Rib height = 25mm to 43 mm.

(vi) Coating = Pre-painted aluminium/zinc coated steel with AZ150 (150g/m²) or AZ200 (200g m²/) on both surfaces. or pre-painted aluminium/zinc/magnesium coated steel with AM150 (150g/m²) on both surfaces.

6.1.2.2. Where pierced fixing system complying with MS2500 is specified or shown on the Drawings, the roofing sheet shall have the following requirements:

(i) Base Metal Thickness (BMT) = 0.42mm.

(ii) Total Coating Thickness (TCT) = 0.47mm (AZ150/AM150); 0.48mm (AZ200) *note: Total Coating Thickness (TCT) is the total thickness before paint.

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(iii) After Painted Thickness (APT) = 0.50mm (AZ150/AM150); 0.51mm (AZ200) *note: After Painted Thickness (APT) is the total thickness after paint.

(iv) Cover width = 715 to 1015mm

(v) Rib height = 16mm to 38mm

(vi) Coating = Pre-painted aluminium/zinc coated steel with AZ150 (150g/m²) or AZ200 (200g m²/) on both surfaces. or pre-painted aluminium/zinc/magnesium coated steel with AM150 (150g/m²) on both surfaces.

6.1.2.3. Roll Former (RF), a manufacturer and supplier of a proprietary roofing system approved by JKR, or approved equivalent, which adheres to strict quality assurance procedures in the supply of materials, design with detailing and accessories manufacturing shall be responsible for the manufacturing, supply and delivery of the roofing system.

6.1.3. Fixing

6.1.3.1. Installation procedures shall conform to the recommendation of the manufacturer.

6.1.3.2. The roofing sheets shall be installed and fixed according to the following method:

(i) Concealed fixing using approved clips compatible with the roofing sheet.

(ii) Pierced fixing using approved fasteners compatible with the roofing sheet.

6.1.3.3. The roofing installer shall be registered with CIDB B15.

6.1.3.4. Metallic swarf and all other debris including nail, screws, mortar, construction materials etc. shall be swept away from the roof area and gutters regularly, particularly at the end of each day's work and at completion of the installation works.

6.1.4. Clips and Fasteners

6.1.4.1. Fasteners type shall comply with AS 3566 Class 3 and be certified as such by the supplier of fasteners.

6.1.4.2. The recommended type of fasteners shall conform to the following test:

(i) Salt spray test - 1000 hours

(ii) Kesternich test - 15 cycles.

(iii) Humidity test - 1000 hours.

(iv) UV test - 2000 hours.

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6.1.4.3. All fasteners and screws shall be of the self-drilling type either concealed or screwed fixing, complete with preassembled ethylene propylene diene monomer (EPDM) rubber washers.

6.1.4.4. All fasteners and screws head and body must be monolithic forming with the same material.

6.1.4.5. All fixing clips shall be manufactured from aluminium/zinc coated steel with AZ150 (150g/m^2)

6.1.5. Flashing and Capping

Unless otherwise specified, approved 0.42mm BMT ridge capping, flashing, capping and trimming shall be manufactured to the required shape and sizes. The flashing and capping materials used shall be from the same material as the roofing sheets.

6.1.6. Sealants

Only neutral cure silicone rubber sealant type OCI N-192 or equivalent shall be used conforming to AS 3902.

6.1.7. Lightning Conductors

Aluminium lightning conductor is recommended for use on steel roof systems.

6.2. All fixing accessories shall be rust-resistant and of suitable design and construction as recommended by the manufacturer for the roofing system and as approved by the S.O.. All fasteners and screws shall be of the self-drilling type either concealed or screwed fixing, complete with preassembled EPDM rubber washers.

6.3. For identification and traceability record, all steel roof decking shall be printed permanently with branding text which will include Base Metal Thickness (BMT), coating mass, steel grade, type of finish coat, roof profile, colour and reference number for mill certificate. Meanwhile, storage and packaging of alum/zinc steel roof decking shall be strictly in accordance with the manufacturer's recommendation and comply with the S.O.'s requirements.

6.4. All roof decking sheets, capping, flashing etc. or wall cladding shall be new, clean, regular, straight and true to shape with sharp defined profiles, free from cracks, chips, bends and defects detrimental to practical use or from other surface imperfections.

6.5. At Site, the sheets shall be lifted from the transport carrier by a crane and properly stacked clear of the ground, ready to be lifted up to the roof structure for laying. Where sheets are to be manually lifted, care should be taken not to drag the sheets to avoid scraping away the surface coating.

6.6. Where storage is necessary, stack heights shall be kept to a minimum and the sheets shall be stacked in a sloping position. Sheets shall be stacked off a dry firm ground, under cover by tarpaulin or polythene sheets but ventilated and away from building operations. Should the stack sheets become wet, they shall be immediately dried to prevent staining and degradation of the surface coatings.

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6.7. The roof shall have the absolute water-tightness and the method of installation, fixing and fastening decking sheets, caps, flashings etc. including acoustical, insulation and expansion joints, whenever required shall conform strictly to the manufacturer's recommendation.

6.8. The completed portions of the roof shall be clear of all metallic particles such as blind rivet shanks, screws, nuts, nails etc. and dirty footprints should be wiped off to avoid early deterioration/corrosion and discolouration. Damages to the coating shall be repaired with touch-up paint as recommended by the manufacturer and approved by the S.O..

7. Roofing Sheet for Marine Environment (Coastal Areas)

7.1. The correct type of metal sheet profile shall be installed for coastal areas as recommended by the roof manufacturer and approved by the S.O..

7.2. Unless otherwise specified or shown on the Drawings, the roofing sheet for marine environment shall be produced with minimum aluminium/zinc alloy coating mass of 200g/m² (Coating Class AZ 200) or minimum aluminium/zinc/magnesium alloy coating mass of 150g/m² (Coating Class AM150) on both surfaces.

7.3. The aluminium/zinc alloy coated steel shall be manufactured and certified by SIRIM according MS 1196 and AS 1397 or the aluminium/zinc/magnesium alloy coated steel shall be produced and certified by SIRIM according to MS 2657 "Continuous Hot-Dip Metallic Coated Steel Sheet and Strip - Coatings of Zinc Alloyed With Aluminium and Magnesium" and AS 1397 with 55% aluminium, 41.5% zinc, 2% magnesium and 1.5% silicon.

7.4. The pre-painted finish over the aluminium/zinc alloy coated base steel or aluminium/zinc/magnesium alloy coated base steel shall conform to MS 2383 and AS/NZS 2728 with 2000 hours of Cyclic Corrosion Test (CCT) to meet ISO 9223 Category 4 (C4) environment or with 4000 hours of Cyclic Corrosion Test (CCT) to meet ISO 9223 Category 5 (C5) environment. The exterior super polyester paint finish shall have a nominal dry film thickness of 20µm over 5µm thick corrosion inhibitive primer on top side or weather side. The backing coat shall be with nominal dry film thickness of 5µm Shadow Grey over 5µm corrosion inhibitive primer.

7.5. The material warranty from the manufacturer shall be submitted. Material warranty shall be up to 25 years against perforation by corrosion, 15 years against paint flake and peel, 12 years against colour fading and 5 years against dirt staining for the project Site within ISO 9223 Category 4 (C4) environment or between 201m to 1km from the calm marine environment or between 401m to 1km from the surf marine environment.

7.6. Fasteners used shall comply with AS 3566 Class 4 and be certified as such by the supplier of fasteners and to the approval of the S.O..

7.7. All fixings and associated components shall be manufactured from compatible metals and coated conforming to ISO 9223 Category 4 (C4) and Category 5 (C5) environment. Flashings shall be made from the same material as the roofing sheets.

7.8. Unless otherwise stated in the Drawings, where skylight roofing are to be used, they shall comply with UBBL 1984.

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8. Bituminous Corrugated Roofing Sheets

8.1. Unless otherwise shown on the Drawings, the bituminous corrugated roofing sheets shall have the following minimum requirements:

8.1.1.	Length	= 2000mm
8.1.2.	Width	= 950mm
8.1.3.	Cover width	= 855mm
8.1.4.	Thickness	= 3mm
8.1.5.	Weight of material	= 3.3kg/m^2
8.1.6.	Thermal resistance R- value	= 0.04mK/W
8.1.7.	Thermal conductivity	= 0.066W/mK

8.2. Unless otherwise shown on the Drawings, the Bituminous Corrugated Roofing Sheets shall be laid at a minimum roof pitch of 5° on timber battens at spacing and tightly nailed/screwed as recommended by the manufacturer.

8.3. Ridge capping, nails and screws shall be provided to match the roofing sheets while ridges, verges, eaves, hips, valleys, side-wall and end-wall details shall be fixed strictly in accordance with the manufacturer's recommendation.

9. Bituminous Corrugated Roofing Tiles

9.1. Unless otherwise shown on the Drawings, the bituminous corrugated roofing tiles shall have the following minimum requirements:

9.1.1.	Length	= 1060mm
9.1.2.	Width	= 400mm
9.1.3.	Wave height	= 40mm
9.1.4.	Thickness	= 3mm

9.2. Bituminous roofing tiles shall be laid at a minimum roof pitch of 9° and on timber or steel battens approved for roofing at spacing and tightly nailed/screwed as recommended by the manufacturer.

9.3. Ridge capping, nails and screws shall be provided to match the roofing tiles while ridges, verges, eaves, hips, valleys, side-wall and end-wall details shall be fixed strictly in accordance with the manufacturer's recommendations.

10. Fibre-cement Corrugated Sheets

10.1. Fibre-cement corrugated sheets shall comply with MS 1224. The thickness of the sheets shall be 3mm thick for shallow corrugation and 4mm thick for medium corrugation. The cement shall comply with MS 522: Part 1. Asbestos processed or unprocessed shall not be added to fibre-cement sheets.

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10.2. The surface intended to be exposed to the weather shall have a generally smooth finish. Variations of the surface appearance which do not impair the characteristics of the sheets as defined in MS 1224 are permitted.

10.3. Unless otherwise stated in the Drawings, where skylight roofing are to be used, they shall comply with UBBL 1984.

11. Heat Insulation

11.1. General

Heat insulation systems shall comply with MS 1020 and MS 1525. Samples of the insulation material shall be submitted to the S.O. for approval before they are used, and subsequent delivery shall be up to the standard of samples approved.

11.2. Reflective Foil

11.2.1. Reflective foil shall be fire-retardant double sided aluminium reflective foil bonded to reinforced high density polyethylene woven fabric comply with MS2095: 2014

11.2.2. The reflective foil materials used shall conform to fire safety requirements and BS 476 Part 6 & Part 7 (Class O): Fire Test on Building Materials and Structures on the following test:

11.2.2.1. Part 6: Method of test for fire propagation for products conforming to BS 476

11.2.2.2. Part 7: Method of test to determine the classification of the surface spread of flame conforming to BS 476

11.2.3. Reflective foil properties shall conform to the following:

11.2.3.1. Thickness : 137 ± 20 micron thick.

11.2.3.2. Grammage : 163 ± 10g/m^2.

11.2.3.3. Tensile strength: 500 N/ 50mm (MD), 500 N/50mm (Cross Direction) MD≥9.5; CD≥6.0.

11.2.3.4. Emissivity ASTM E408 ≤ 0.05(97±2%) / Reflectivity = 95%
ASTM C1371 ≤0.05

11.2.3.5. Initial Tear resistance: ASTM D1004 >30N ≥65.0

11.2.4. Reflective foil material shall be used on its own with all types of roofs except with metal decking roof. Where the roof is of metal decking, the reflective insulation material shall be laid below stone wool or glass wool for effective thermal and acoustic performance.

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11.2.5. The reflective foil material shall be installed strictly in accordance with the manufacturer's recommendation. A uniform air space of 20mm to 50mm between the tile roof covering and the insulation material shall be provided to ensure the effectiveness of the reflective surface. All punctures shall be effectively sealed with similar reflective material to prevent air leakage and moisture transfer.

11.2.6. The reflective foil surface shall be free from any thin film of oil, plastic or lacquer coatings. All dust and/or moisture, if any, shall be thoroughly cleaned prior to installation. All dust and/or trademarks shall be limited to a maximum of 5% of the total reflective area. The insulation material shall be fitted closely around electrical outlet boxes, plumbing etc and taped securely to eliminate gaps or voids through which air or water vapour might pass into the cooler space.

11.3. Glass Wool Insulation

11.3.1. Unless otherwise shown on the Drawings, glass wool insulation shall be 85mm thick. It shall have R-Value @ R2.0 to R2.3 m²KW (tested at a mean temperature of 20°C based MS1020 and MS1525 tested according to ASTM C177/C518) and comply with MS1525. The glass wool insulation material used shall conform to BS 476 for Fire tests on building materials and structures on the following:

11.3.1.1. Part 6: Method of test for fire propagation for products conforming to BS 476

11.3.1.2. Part 7: Method of test to determine the classification of the surface spread of flame conforming to BS 476.

11.3.2. The glass wool insulation material used shall be of no added urea formaldehyde and as approved by the S.O.. Glass wool insulation shall be fixed in accordance with the manufacturer's recommendations and to the approval of the S.O..

11.3.3. Where a single skin metal roof is applied, galvanised wire mesh BRC 3316 or equivalent shall be used to support the reflective foil and the glass wool insulation.

11.3.4. Glass wool insulation material used shall be non-combustible under BS 476 Part 4 or EN 13501-1 Class A1:

Any reference to being Class O shall be construed as a requirement as following:

a. The material shall be non-combustible as per BS 476 Part 4; or

b. Classified as EN13501 Class A1 non-combustible material.

11.3.5. Glass wool insulation material used shall made of fibres, which comply with the exoneration criteria for carcinogenicity (Note Q) of the Regulation (EC) 1272/2008 and EUCEB certified.

11.3.6. Use of plastic or polyurethane foam (PU foam) based insulation shall be prohibited due to health hazards. PU foam-based insulation releases toxic substances when heated and burned.

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11.4. Mineral Wool Insulation

11.4.1. Unless otherwise shown on the Drawings, it shall have R-Value @ R2.0 to R2.3 m²KW (tested at a mean temperature of 20°C based MS1020 and MS1525 tested according to ASTM C177/C518). The mineral wool insulation material used shall conform to BS 476 for fire tests on building materials and structures on the following:

11.4.1.1. Part 6: Method of test for fire propagation for products conforming to BS 476.

11.4.1.2. Part 7: Method of test to determine the classification of the surface spread of flame conforming to BS 476.

11.4.2. The mineral wool insulation material used shall be of no added urea formaldehyde and as approved by the S.O.. Mineral wool insulation shall be fixed in accordance with the manufacturer's recommendations and to the approval of the S.O..

11.4.3. Where a single skin metal roof is applied, galvanised wire mesh BRC 3316 or equivalent shall be used to support the reflective foil and the mineral wool insulation.

11.4.4. Where a double skin metal roof is applied, underliner must be used to support the insulation components and supporting structure such as sub-girt, tophat, batten or other equivalent must be provided in between underliner and outer cladding to form the insulation system without compression.

11.5. Stone Wool Insulation

11.5.1. Unless otherwise shown on the Drawings, stone wool insulation shall be 50mm thick minimum. It shall have R-Value @ R2.0 m²·KW (tested at a mean temperature of 20°C based MS1020 and MS1525 tested according to ASTM C177/C518). The stone wool insulation material used shall conform to BS 476 for fire tests on building materials and structures on the following:

11.5.1.1. Part 6: Method of test for fire propagation for products conforming to BS 476.

11.5.1.2. Part 7: Method of test to determine the classification of the surface spread of flame conforming to BS 476.

11.5.2. The stone wool insulation shall conform to the following:

11.5.2.1. Thermal conductivity 0.034 - 0.036 W/mK at 20°C mean temperature tested in accordance with ASTM C518.

11.5.2.2. Noise reduction coefficients (NRC) of up to 1.0 tested to BS EN ISO354 at 50mm thickness.

11.5.2.3. Non-combustible according to BS 476 Part 4 or EN 13501-1 and melting point of at least 1000°C in accordance with ASTM E794.

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11.5.2.4. No CFCs, HFCs, HCFCs or asbestos shall be used in the manufacture of the product.

11.5.2.5. No perceptible odour shall be present when tested in accordance with ASTM C665.

11.5.2.6. Not sustaining fungus growth under normal conditions according to ASTM C1338.

11.5.2.7. The metal plates (steel and aluminium) in contact with the insulation shall show no corrosion greater than that observed on the comparative plates in contact with sterile cotton according to ASTM C665.

11.5.2.8. Flame spread index less than zero (0) and smoke developed index less than five (5) according to ASTM E84.

11.5.2.9. Total VOC emission shall be less than 0.25 mg/m3 and particle emission shall be less than 0.02 mg/m^3 tested according to ASTM D5116.

11.5.2.10. Moisture absorption shall be less than or equal to 0.04%vol. according to ASTM C1104/C1104M and water absorption shall be less than or equal to 0.5kg/m^2 (short-term immersion) according to EN1609.

11.5.3. The stone wool insulation material used shall be of no added urea formaldehyde and as approved by the S.O.. Stone wool insulation shall be fixed in accordance with the manufacturer's recommendation and to the approval of the S.O..

11.5.4. The insulation material must be protected from the exposure of rain, water immersion and chemical contamination during the storage and installation. If the insulation is in contact with water, adequate drying time must be allowed to ensure that the insulation is completely dried prior to covering of the roof covers. Stone wool insulation material used shall be non-combustible under BS 476 Part 4 or EN 13501-1 Class A1:

i) Any reference to being Class O shall be construed as a requirement that;

a. The material shall be non-combustible as per BS 476 Part 4; or

b. Classified as EN13501 Class A1 non-combustible material.

11.5.5. The stone wool insulation shall be installed to the thickness specified and placed butt jointed. Wherever possible the Contractor shall avoid the compression of the insulation material. Stone wool insulation material used shall be made of fibres, which comply with the exoneration criteria for carcinogenicity (Note Q) of the Regulation (EC) 1272/2008 and EUCEB certified.

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11.5.6. Where a single skin metal roof is applied, galvanised wire mesh BRC 3316 or equivalent shall be used to support the reflective foil and the stone wool insulation. Use of foam-based insulation shall be prohibited due to health hazards. Foam-based insulation releases toxic substances when heated and burned.

11.5.7. Where a double skin metal roof is applied, underliner must be used to support the insulation components and supporting structure such as sub-girt, tophat, batten or other equivalent must be provided in between underliner and outer cladding to form the insulation system without compression.

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1. General

This section provides the generally applicable requirements for steel and metal for the construction of structures, building components and other related works. All materials shall conform to the relevant Malaysian or British or European Standards or other internationally recognised standards with the approval of the S.O..

2. Hot Rolled Structural Steelworks

2.1. All hot rolled structural steelworks design, materials, drawings, workmanship (welding, bolting, fabrication and erection), protective treatment (corrosion and fire), Quality Assurance and Quality Control shall be in accordance with the JKR Specification for Structural Steelworks (No. JKR 20601-0272-22) or its latest edition.

2.2. The Contractor shall procure all steel products or components from manufacturers/ suppliers with *Perakuan Pematuhan Standard* (PPS) as specified in SECTION A: PRELIMINARIES AND GENERAL CONDITIONS.

2.3. The Contractor is reminded to employ certified skilled construction workers with *Sijil Kemahiran Kompetensi Pembinaan* (SKKP) as specified in SECTION A: PRELIMINARIES AND GENERAL CONDITIONS.

2.4. Quality Assurance and Quality Control (QA & QC)

The Contractor shall submit a Quality Assurance and Quality Control programme as specified in the JKR Specification for Structural Steelworks (No. JKR 20601-0272-22) or its latest edition.

2.5. Drawings and Design Reports

2.5.1. The Drawings to be submitted by the Contractor shall be endorsed by Professional Engineer with Practicing Certificate (P.E.P.C.) based on construction drawings are as follows:

2.5.1.1. Shop drawings:
- Fabrication drawings;
- Erection drawings.

2.5.1.2. As-built drawings.

2.5.2. Where the Contractor provides the design, the Contractor shall prepare design reports and Drawings with details in accordance with *MS EN 1993* or other relevant standards. The Drawings and design reports shall be endorsed by a P.E.P.C.. The Contractor shall also prepare Drawings of temporary restraints and/ or works for all construction stages in compliance with the requirements specified in the JKR Specification for Structural Steelworks (No. JKR 20601-0272-22) or its latest edition.

2.6. The Contractor shall refer to the list provided in the JKR Specification for Structural Steelworks (No. JKR 20601-0272-22) or its latest edition as in **Appendix 1** (but not limited) for design, workmanship, erection, protective treatment and construction work programme.

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2.7. Records

2.7.1. All records related to the works shall be made available to the S.O. throughout the contract period.

2.7.2. The Contractor shall submit to the S.O. document and records for approval which shall include but not limited to:

2.7.2.1. Drawings as in Item 2.5. and documentation register;

2.7.2.2. Mill certificates for materials and certification for welding consumables;

2.7.2.3. Calibration of equipment;

2.7.2.4. Welding Procedure Specification (WPS);

2.7.2.5. Inspection, laboratory test reports and valid test certificates;

2.7.2.6. Type of protective treatment system for corrosion and fire including technical data sheet and method statement;

2.7.2.7. Delivery schedules and method statements for fabrication, erection and installation;

2.7.2.8. Construction works sequences;

2.7.2.9. Surveys and final inspection results;

2.7.2.10. Completion of erection and hand over certification.

3. Prefabricated Cold Formed Steel Roof Trusses

3.1. All prefabricated components shall be manufactured only by reputable licensed truss suppliers listed in J-TRUSS system online (Application and Approval of Truss System Provider) and approved by the S.O.. This supplier duly termed as 'System Provider' is responsible for the analysis, design, detailing, drawing, manufacture, material, handling and erection of the roof members, and their ancillary fixing components. The full requirement is outlined in the JKR Specification for Prefabricated Cold Formed Steel Roof Trusses (No. JKR 20601-0270-22 or its latest edition.

3.2. System Provider (S.P.)

The System Provider (S.P.) is a manufacturer and a supplier of a proprietary roof truss system, approved by JKR which employs quality assurance procedures in the supply of material, design with detailing and trusses component manufacturing. The S.P. shall be responsible to fabricate, deliver and install the cold formed steel roof trusses system. The S.P. shall guarantee the due performance of the entire roofing system.

3.3. Duties of P.E.P.C.

3.3.1. The P.E.P.C. shall sign-off and endorse every process of the truss system delivery that includes:

3.3.1.1. Roof truss analysis and design;

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3.3.1.2. Construction drawings;

3.3.1.3. Fabrication drawings;

3.3.1.4. Design changes document in every stage of works;

3.3.1.5. Roof truss installation completion document, prior to issuance of Certificate of Practical Completion (CPC) by the S.O.;

3.3.1.6. As Built Drawings; and

3.3.1.7. Defect report prior to issuance of Certificate of Making Good Defect (CMGD) by the S.O..

3.4. Fabricator

All trusses may be assembled and installed either by S.P. or licensed company appointed by the S.P. and registered with CIDB under Class B02 IBS: *Sistem Kerangka Keluli.* A copy of CIDB registration certificate shall be submitted to the S.O. for verification.

3.5. Installer

All fabrication and installation works shall be executed and supervised by skilled construction worker accredited and certified by CIDB. The S.O. may verify the identification and qualification of the installer prior to the installation.

3.6. General Truss Limitation

3.6.1. Prior to any prefabricated cold formed steel roof trusses works, the following general limitation shall be applied:

3.6.1.1. Maximum truss span or unsupported truss length 12.00 metres with permitted deviation of ±0.05 metres unless otherwise instructed by the S.O.;

3.6.1.2. Maximum truss spacing of 1.20 metres with permitted deviation of +0.025 metres;

3.6.1.3. The minimum basic wind speed shall be 35.0 m/s;

3.6.1.4. Minimum base steel thickness for main truss member shall be;

a) 1.0mm for unsymmetrical section or open cross section; or

b) 0.6mm for symmetrical machine-manufactured box or closed cross section.

3.6.1.5. Minimum base steel thickness for other truss element shall be;

a) 0.5mm for batten or purlin;

b) 1.2mm for wall plate; and

c) 1.0mm for bracing.

3.6.1.6. Minimum section depth shall be 75.0mm in the direction of local major axis of truss member section;

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3.6.1.7. Minimum section flange shall be 35.0mm in the direction of local minor axis of truss member section;

3.6.1.8. Minimum section lip shall be 7.0mm in the direction of local major axis of truss member section;

3.6.1.9. Minimum section batten or purlin shall be proposed and endorsed by P.E.P.C. according to the design; and

3.6.1.10. Connector shall only be of hexagon head/wafer-head self-drilling screw or bolt. Welding is not allowed as fastener.

3.7. Analysis, Design Report and Drawings Submission

3.7.1. The S.P. shall propose a roof truss system which is safe, functional and conforming to design standard. Submission of proposal shall include truss analysis, design report, and construction drawings. The truss analysis and design shall indicate all design parameters including but not limited to loads, load combinations, connections criteria, bracings and tie-downs of the truss. Design output of the truss members, battens, connections, tie-downs and wall plates, anchors, bracings, truss accessories, splicing and stiffeners whereby related to the analysis shall be included in the design report. Refer to **Appendix 3** of JKR Specification for Prefabricated Cold Formed Steel Roof Trusses (No. JKR 20601-0270-22) or its latest edition.

3.7.2. All details in the construction drawing shall be sufficient as such to enable checking against the analysis and design report, by specifying and providing not limited to; the truss layout and configuration, steel grades, section properties of members, length of members in each truss configuration, properties of truss accessories, specification of corrosion protection, specification of fastener and anchor, tie-down and anchoring details and all type of connection details including the connection of all attachments to the trusses.

3.7.3. Technical specifications or mill certificates for base steel, fastener and anchor of which the designs refer to shall also be included in the submission. Verification test certificate from an approved accredited laboratory on the technical parameter specified in the technical specifications or mill certificates shall be submitted upon request by the S.O..

3.8. Warranty

3.8.1. When a prefabricated cold formed steel roof truss system is used, the Contractor shall submit to the S.O. a warranty from the S.P. with the following provisions:

3.8.1.1. The products used are genuine and free from manufacturing defects;

3.8.1.2. The prefabricated cold formed steel roof truss system is installed in accordance with the S.P.'s instructions, guidance and specifications that will deliver the specified level of performance; and

3.8.1.3. The warranty certificate shall cover a period of ten (10) years from the date of Certificate of Practical Completion against any defect or failure due to the installation and workmanship by the S.P.'s registered panel installer.

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4. Metal Frames for Doors and Windows

4.1. Steel Frames

4.1.1. The Contractor shall supply, assemble and fix steel frames for doors and windows as shown on the Drawings. The steel frames shall comply with BS 6510 and shall be from an approved source and shop-primed with two (2) coats of red lead oxide or other approved rust resisting primer.

4.1.2. The steel frames shall be manufactured from sections rolled from good commercial grade galvanized mild steel in single sections, mechanically straightened with all corners pre-cut with a 45 degrees mitre joint giving a snug and accurate fit, fully electrically welded, and carefully ground and cleaned, or shall be mechanically jointed by an approved method.

4.1.3. All screws, nuts, bolts and washers shall be of stainless steel.

4.1.4. Steel frames shall be painted as specified in SECTION N: PAINTING.

4.2. Aluminium Frames

4.2.1. The Contractor shall supply, assemble and fix aluminium frames for doors and windows as shown on the Drawings. Unless otherwise specified, all aluminium frames for windows shall be fabricated from sections extruded from aluminium alloy conforming to MS 832. All aluminium frames for glass sliding doors shall be fabricated from sections extruded from aluminium alloy and in compliance with MS 1017.

4.2.2. Unless otherwise shown on the Drawings, aluminium surfaces shall be natural anodised finish, free from alloy defects, dye marks, scratches and other surface blemishes in accordance with BS 3987 with an anodic coating of 15μ minimum thickness complying with BS EN 12373-1.

4.2.3. All coloured anodized finish to aluminium exposed surfaces shall be subject to the S.O.'s approval.

4.2.4. All aluminium extrusion or sheet exposed surfaces after anodizing and after colouring, if required by the S.O., shall be sealed, and the adequacy of the sealing shall be given special emphasis.

4.2.5. All fasteners such as bolts and screws shall be of stainless steel type A2-70 (minimum) in compliance with ISO 3506 or other suitable materials as specified in the Drawings. Rivets shall be stainless steel or aluminium alloy appropriate to the applications.

4.2.6. Extruded aluminium framing members shall be fabricated from designated alloys complying with MS 2289. Ancillary members such as sills, couplings and the like formed from sheet materials, they shall be fabricated from designated alloys complying with MS 2040.

4.2.7. Where friction stays and hinges are fastened onto the framing section, the portion that receives the fastener shall not be less than 2.5mm thick.

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4.3. Frames for Adjustable Louvre Windows

4.3.1. The Contractor shall supply, assemble and fix frames for adjustable louvre windows as shown on the Drawings in compliance with MS 1057.

4.3.2. Unless otherwise specified, the frames shall be of approved manufacture. The frames shall be supplied complete with weather seal and non-ferrous bearings, spring clips, locking device and weather stripping with all necessary spacing pieces. The frames, coupling mullions and spacer brackets shall be minimum 1.2mm thick (18 SWG) or otherwise specified cold-rolled steel strip galvanised with hot-dipped process. Unless otherwise specified in the Drawings, the clips and pivots to receive the louvres shall be of durable nylon material and sample submitted shall be to S.O.'s approval.

4.3.3. The operating rods shall be 2.13mm thick (14 SWG). The handle and lock shall be 2.642mm thick (12 SWG) steel.

4.3.4. Unless otherwise specified, the finish shall be anodized coating of 15μ (average) minimum complying with BS EN 12373-1.

4.4. Accessories

4.4.1. Accessories for each steel or aluminium frame for doors and windows shall be supplied complete with:

4.4.1.1. Sufficient number of built-in stainless steel hinges as per Schedule of Ironmongery under SECTION I: TIMBER, JOINERY AND IRONMONGERY;

4.4.1.2. Two (2) rubber buffers per closing jamb, to reduce noise and vibration;

4.4.1.3. Welded mortar guard; Adjustable stainless steel striker plate with a gently curved lead-in edge;

4.4.1.4. Removable spreader bars, to ensure a perfect square during transportation and installation; and

4.4.1.5. Minimum of eight (8) pieces of 4mm brick ties, to ensure a tight permanent fit.

4.5. Samples

Samples of steel or aluminium sections with complete accessories for the doors and windows, together with complete set of shop drawings of all works shall be submitted to the S.O's for approval prior to the commencement of any work.

4.6. Installation

4.6.1. Unless otherwise specified or shown on the Drawings, all types of window and door frames shall be fixed or installed using the sub-frame method in accordance with the manufacturer's recommendation and to the S.O.'s approval.

4.6.2. All joints on the window and door frames shall be sealed using polyurethane (PU) type joint sealant.

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4.6.3. Where buildings are located near to the coastal area, the bolts, nuts and screws used shall be of stainless steel unless otherwise specified.

4.6.4. Unless otherwise specified in the Drawings, the adjustable louvre side frames shall fix to the aluminium frames and shall be installed using the sub-frame method in accordance with the manufacturer's recommendation and to the S.O.'s approval.

5. Collapsible Gates, Roller Shutters Etc.

The Contractor shall provide and fix approved collapsible steel gates, folding shutters, roller shutters etc. complete with all necessary accessories as approved by the S.O. to the sizes and positions as shown on the Drawings. Unless otherwise specified in the Drawings, they shall be galvanised and fixed in accordance with the manufacturer's instructions.

6. Sundries

6.1. Unless otherwise specified in the Drawings, mild steel shall be used for balustrades to staircases, verandahs, balconies, etc. shall be fixed as shown on the Drawings.

6.2. All iron and steel for the sundries shall be of the quality approved by the S.O.. Screws and bolts shall have washers where appropriate. Hooks for carrying ceiling fans shall be formed from 13mm diameter mild steel rods bolted to timber ceiling members or ragged into concrete.

6.3. Welded mesh, expanded metal, aluminium sheets etc. shall be provided and fixed as shown on the Drawings.

6.4. Mild steel grilles, drain cover gratings shall be provided and fixed as shown on the Drawings. Unless otherwise stated, all steelworks shall be joined by continuous welding.

6.5. Ant caps shall be of 16 gauge galvanised iron sheets formed to shape as shown on the Drawing. The caps shall be fixed between concrete stumps/brick piers or walls and timber posts or plates as required. The caps shall project 60mm and inclined at 45^0 from the surface.

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