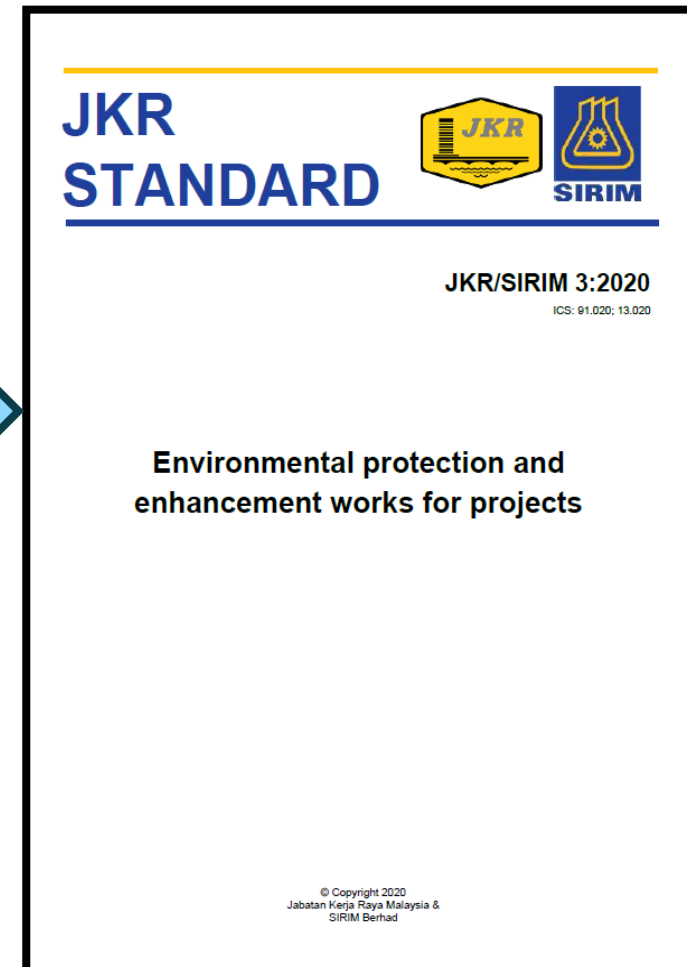
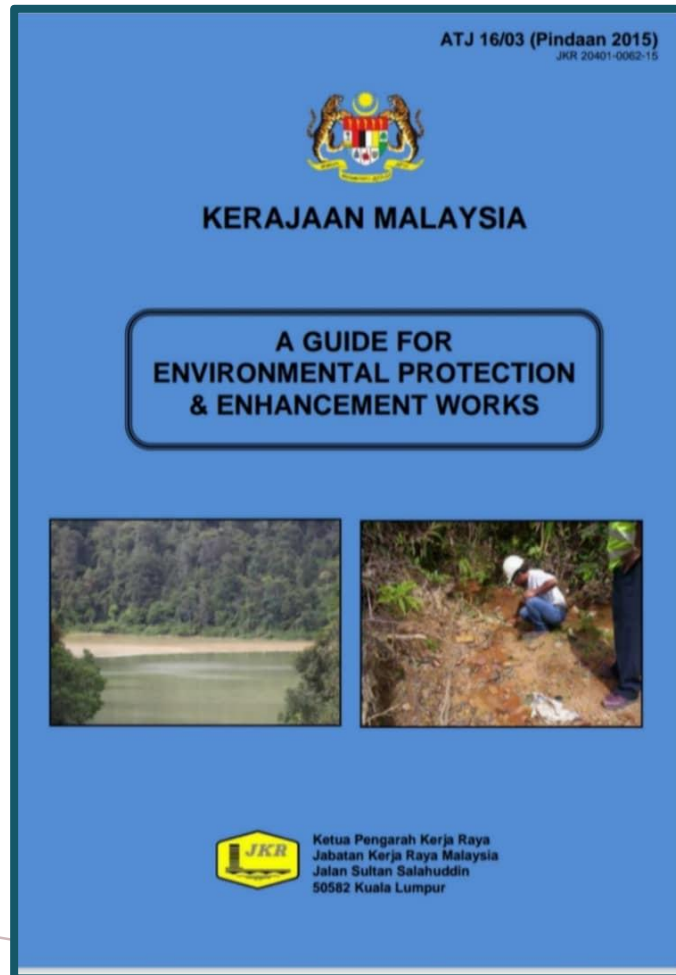


***JKR STANDARD 3 : 2020
ENVIRONMENTAL
PROTECTION AND
ENHANCEMENT
WORKS FOR PROJECTS***

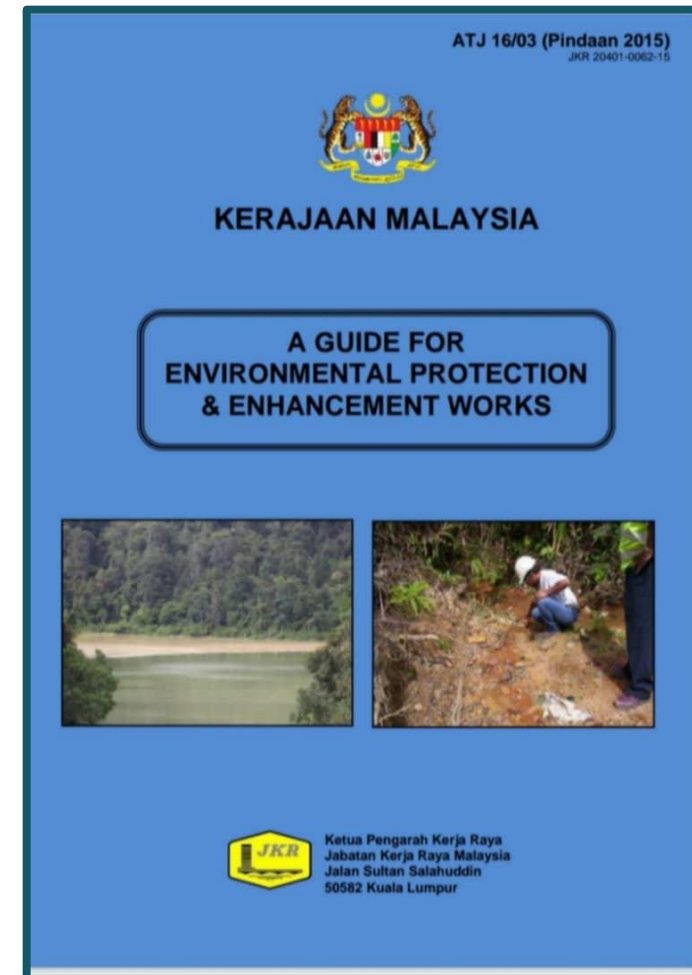


JKR STANDARD 2020 - ENVIRONMENTAL PROTECTION AND ENHANCEMENT WORKS FOR PROJECT TELAH DIBANGUNKAN UNTUK MENAMBAHBAIK ARAHAN TEKNIK (JALAN) 16/03 (PINDAAN 2015) – A GUIDE FOR ENVIRONMENTAL PROTECTION & ENHANCEMENT WORKS



KEPERLUAN MENAMBAHBAIK ARAHAN TEKNIK (JALAN) 16/03 (PINDAAN 2015) – A GUIDE FOR ENVIRONMENTAL PROTECTION & ENHANCEMENT WORKS

- Menghasilkan standard yang menyeluruh bagi pengurusan alam sekitar yang merangkumi fasa perancangan, rekabentuk, perolehan dan pembinaan merangkumi projek infrastruktur dan bangunan.
- Mengambil kira semua keperluan semasa dari segi perundangan, polisi dan teknikal yang telah ditetapkan oleh pihak berkepentingan untuk pengurusan alam sekitar bagi pelaksanaan projek.
- Menyediakan panduan bergambar dan lukisan standard bagi amalan pengurusan

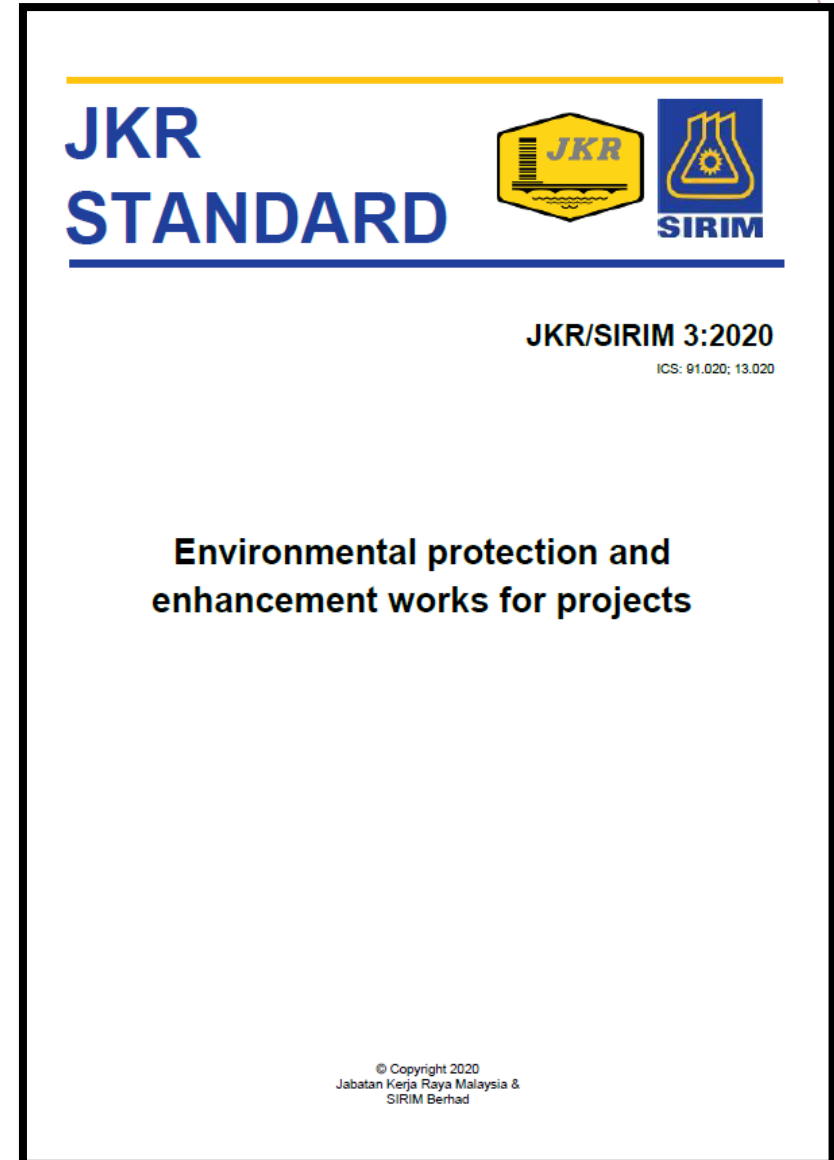


JKR STANDARD EPW 2020

Dibangunkan dengan kerjasama
SIRIM STS Sdn. Bhd.

Memberi panduan yang komprehensif dalam kerja perlindungan alam sekitar dengan mengambilkira keperluan perundangan dan teknikal semasa meliputi pelbagai agensi luar di Semenanjung Malaysia, Sabah dan Sarawak.

Sesuai digunakan untuk semua projek JKR Malaysia termasuk projek jalan, bangunan, jeti dan lain-lain serta pihak luar/swasta.



JKR STANDARD EPW 2020

Ahli Jawatankuasa

1. JKR Malaysia - CASKT (Pengerusi), CJ, CKAS, CKIP, CA, CKG & CKC
2. Jabatan Alam Sekitar (JAS)
3. Jabatan Pengairan & Saliran (JPS)
4. Jabatan Mineral & Geosains Malaysia
5. Jabatan Pengurusan Sisa Pepejal Negara
6. PERHILITAN
7. Jabatan Perhutanan
8. PLANMalaysia
9. Suruhanjaya Perkhidmatan Air Negara
10. Jabatan Taman Laut Malaysia
11. Jabatan Perlindungan Alam Sekitar, Sabah
12. Natural Resources and Environmental Board (NREB) Sarawak
13. Jabatan Perikanan Malaysia
14. ERE Consulting Group
15. Eco Synergy Solutions Sdn Bhd
16. Safari Ingeniuers Sdn Bhd
17. SIRIM STS Sdn Bhd

ARAHAN PENGGUNAAN JKR STANDARD EPW 2020

SURAT ARAHAN KPKR BIL 1/2021 BERTARIKH 12 JANUARI 2021

Ruj. Kami :
Tarikh :

4.0 KUAT KUASA

4.1 Surat Arah ini berkuat kuasa pada tarikh sekiranya terdapat arahan dasar terkini memerlukannya dikaji semula dan dikemas

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

(DATO' Ir. HAJI MOHAMAD ZULKEFLY BIN SU

Ruj. Kami : JKR.KPKR:121.010/05 Jld. 22 (I)
Tarikh : 12 Januari 2021

2.0 LATAR BELAKANG

2.1 Secara umumnya, sebelum JKR Standard 2020 ini di bangukan, Arahan Teknik (Jalan) 16/03 (Pindaan 2015) – *A Guide For Environmental Protection & Enhancement Works* telah dijadikan sebagai panduan, rujukan, diguna pakai dan dipraktik serta secara menyeluruh berkaitan skop kerja perlindungan alam sekitar bagi pelaksanaan projek-projek infrastruktur serta bangunan oleh JKR Malaysia.

2.2 Selaras dan merujuk kepada kehendak terkini maka, terdapat keperluan untuk menambah baik Arahan Teknik ini seperti berikut :-

- Menghasilkan satu dokumen rujukan secara menyeluruh bagi skop pengurusan alam sekitar yang merangkumi fasa perancangan, reka bentuk, perolehan dan pembinaan melibatkan pelaksanaan projek infrastruktur dan bangunan.
- Mengambil kira semua keperluan semasa dari segi perundangan, dasar, polisi dan teknikal yang telah ditetapkan oleh pihak berkepentingan serta agensi teknikal luaran untuk skop pengurusan alam sekitar projek meliputi Semenanjung Malaysia, Sabah dan Sarawak.
- Menyediakan panduan bergambar dan lukisan piawai bagi mempraktikkan amalan pengurusan terbaik alam sekitar berdasarkan keperluan teknikal terkini dan pengalaman yang lepas.

2/5



KETUA PENGARAH KERJA RAYA DIRECTOR-GENERAL OF PUBLIC WORKS

Ruj. Kami : JKR.KPKR:121.010/05 Jld. 22 (I)
Tarikh : 12 Januari 2021

Semua Pengarah Kanan/Pengarah Cawangan Ibu Pejabat JKR
Semua Pengarah Kerja Raya Negeri
Semua Pengarah Kerja Raya Wilayah Persekutuan
Semua Pengarah/Pengurus Pembinaan
Pengarah JKR KESEDAR
Pengarah JKR KETENGAH
Semua Jurutera Daerah

SURAT ARAHAN KPKR BIL. 1/2021

ARAHAN PENGGUNAAN JKR STANDARD 2020 ENVIRONMENTAL PROTECTION AND ENHANCEMENT WORKS FOR PROJECTS BAGI PELAKSANAAN PROJEK PEMBANGUNAN OLEH JABATAN KERJA RAYA MALAYSIA

1.0 TUJUAN

- Surat Arah ini adalah bertujuan untuk memaklumkan Arahan penggunaan JKR Standard 2020 – *Environmental Protection and Enhancement Works for Projects* bagi projek pembangunan merangkumi infrastruktur dan bangunan yang dilaksanakan oleh Jabatan Kerja Raya Malaysia (JKR).

1/5

Ruj. Kami : JKR.KPKR:121.010/05 Jld. 22 (I)
Tarikh : 12 Januari 2021

2.3 Sejalan dengan kehendak tersebut di atas maka, JKR Standard 2020 – *Environmental Protection and Enhancement Works for Projects* telah dibangunkan untuk memberi pendedahan, panduan dan rujukan yang komprehensif kepada pengiat industri pembinaan Negara ini khususnya di JKR Malaysia berkaitan pelaksanaan skop kerja perlindungan alam sekitar terutama dalam mengurus, mempraktikkan serta mengaplikasi terhadap pelaksanaan projek infrastruktur dan bangunan.

3.0 KAEDAH PELAKSANAAN

3.1 Dengan Surat Arah ini, JKR Standard 2020 – *Environmental Protection and Enhancement Works for Projects* perlu dijadikan rujukan tambahan selain dari Arahan-Arahan Teknik (Jalan) dan Garis Panduan yang telah sedia ada dalam pengurusan alam sekitar untuk pelaksanaan projek infrastruktur dan bangunan yang baharu atau projek naik taraf bagi memastikan kawalan terhadap aspek dan impak alam sekeliling di tapak projek dapat di optimumkan selaras dengan Dasar Alam Sekitar Negara yang memberi penekanan terhadap alam sekeliling yang bersih, selamat, sihat dan produktif bagi generasi masa kini dan masa hadapan.

3.2 Jika sekiranya terdapat sebarang kemusykilan, pertanyaan dan info lanjut berkaitan JKR Standard 2020 ini, sila hubungi Cawangan Alam Sekitar dan Kecekapan Tenaga (CASKT) di talian 03-4051 8434 / 8418.

3/5

JKR Standard EPW 2020

Perundangan dan Keperluan Umum untuk Projek EIA dan Bukan EIA

Panduan bagi Kerja Fizikal dan Bukan Fizikal (Alam Sekitar) untuk Projek

Table 1. EIA legislation

Location of project	EIA legislation applicable	EIA report format guidelines	Deliverables documents
Peninsular Malaysia, Federal Territories	First Schedule and Second Schedule in the <i>Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015</i>	a) Handbook of Environmental Impact Assessment Guidelines in Malaysia (EGIM) b) EIA Guidelines specific to activities	- EIA Report - EMP - LDP2M2 - P2M2 - ESCP
Sabah	First Schedule in the <i>Environment Protection (Prescribed Activities) (Environmental Impact Assessment) Order 2005</i>	a) Handbook for Environmental Impact Assessment (EIA) in Sabah (2 nd edition) b) Garis panduan penyediaan Laporan Pematuhan Alam Sekitar (ECR) c) EIA Guidelines specific to activities	- PMM Report - ECR
	Second Schedule in the <i>Environment Protection (Prescribed Activities) (Environmental Impact Assessment) Order 2005</i>		- EIA Report - ECR
Sarawak	<i>The Natural Resources and Environment (Prescribed Activities) Order 1994</i>	a) A Handbook of the Policy and Basic Procedure of Environmental Impact Assessment (EIA) in Sarawak b) Handbook of EIA procedures in Sarawak c) EIA Guidelines specific to activities	- EIA Report - EMP - EMR

Figures 1, 2 and 3 outline the procedures of EIA/PMM application for Peninsular Malaysia, Sabah and Sarawak, respectively.

EIA PROCESS FOR PENINSULAR MALAYSIA, FEDERAL TERRITORIES

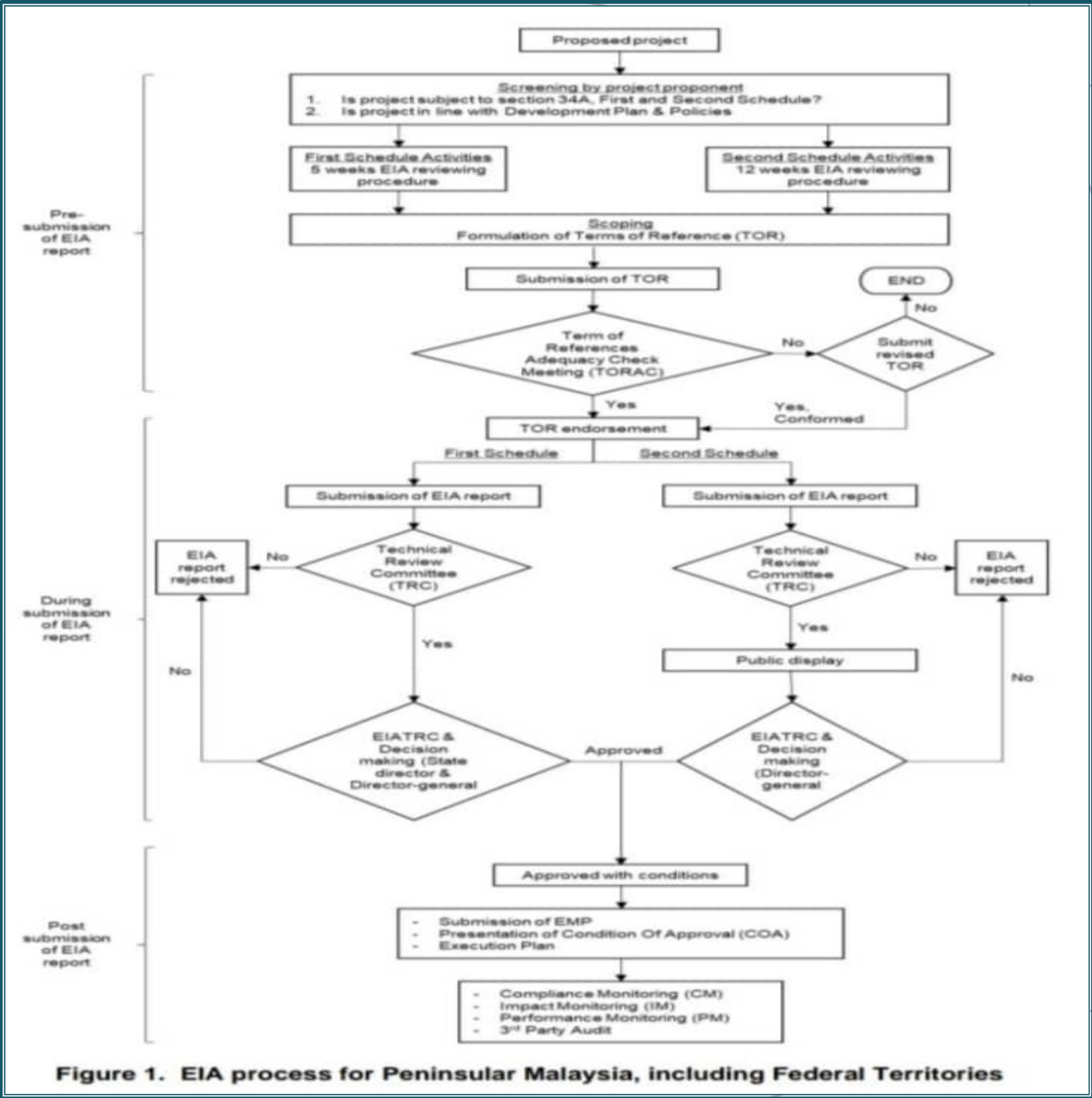


Figure 1. EIA process for Peninsular Malaysia, including Federal Territories

PMM AND EIA PROCESS FOR SABAH

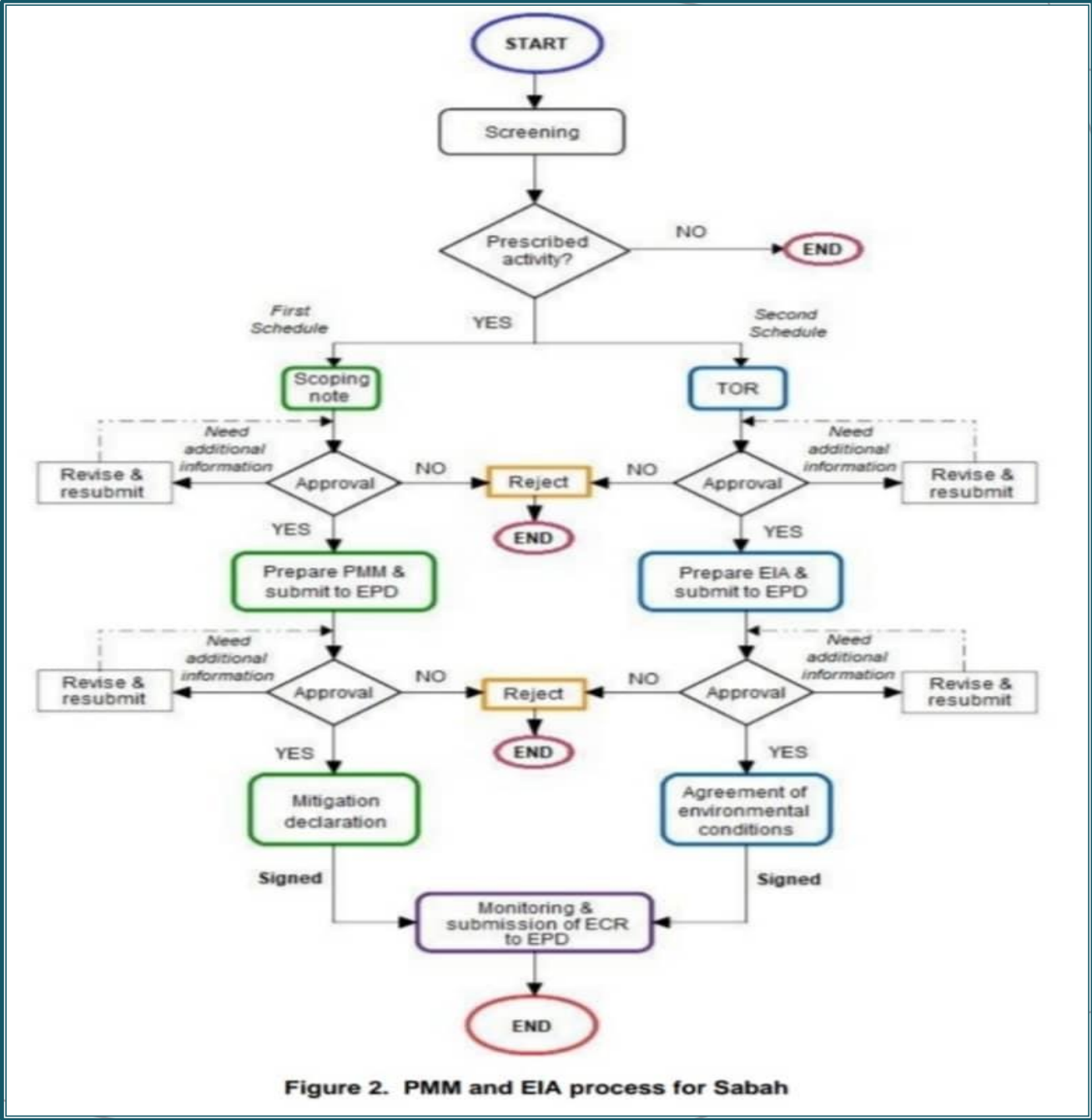


Figure 2. PMM and EIA process for Sabah

EIA PROCESS FOR NREB SARAWAK

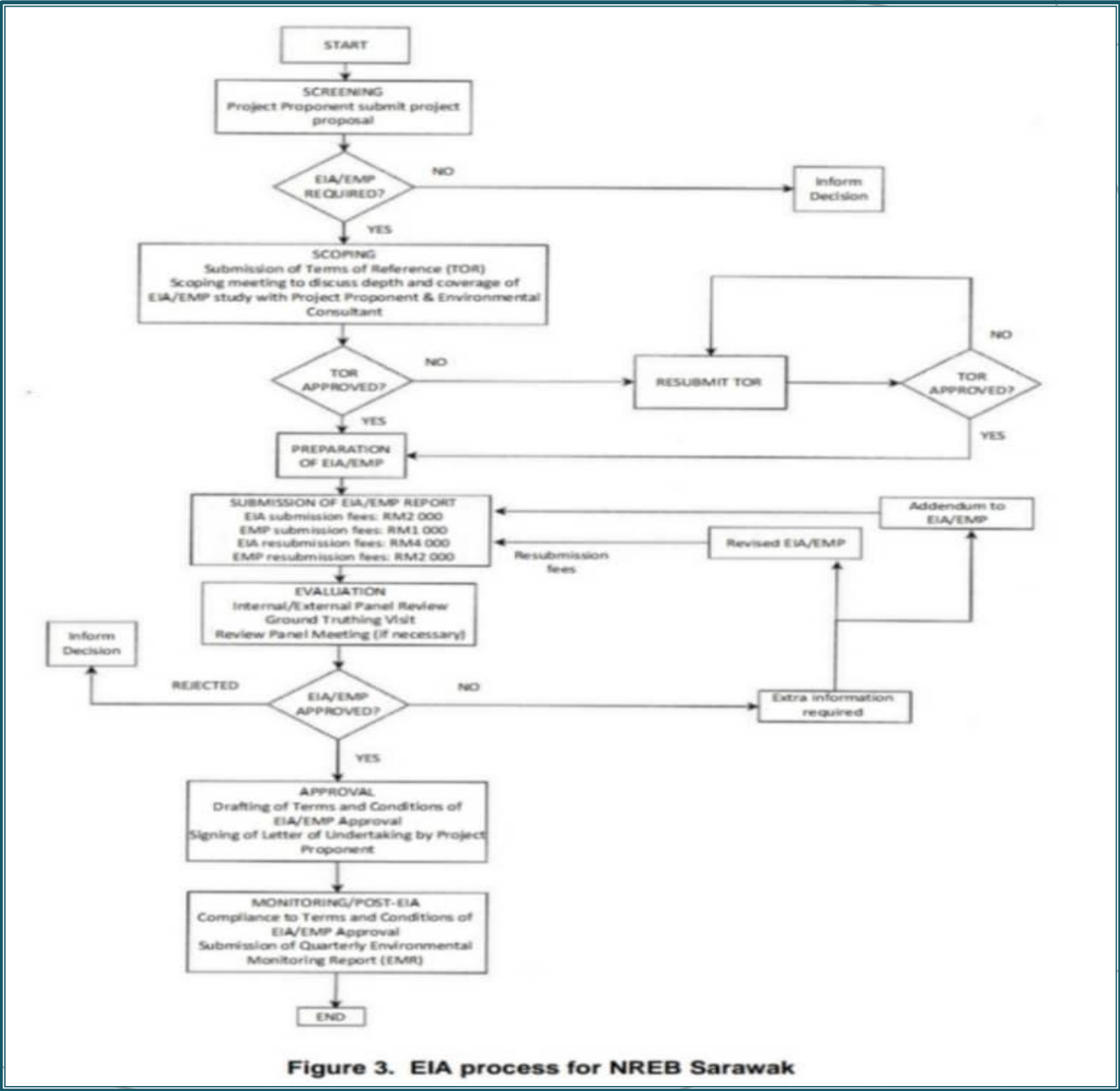


Figure 3. EIA process for NREB Sarawak

Table 2. Water quality standard

Aspects	Parameter	Recommended limit for non-EIA projects	Environmental Quality (Sewage) Regulations, 2009 ^a		National Water Quality Standards (NWQS) ^b	
			Standard A	Standard B	Class IIA	Class IIB
Water ^{a, b}	Turbidity	-	-	-	≤ 50 NTU	≤ 50 NTU
	Suspended solids	-	≤ 50 mg/l	≤ 100 mg/l	≤ 50 mg/l	≤ 50 mg/l
	Biochemical oxygen demands @ 20°C (BOD ₅)	-	≤ 20 mg/l	≤ 50 mg/l	≤ 3 mg/l	≤ 3 mg/l
	Chemical oxygen demand (COD)	-	≤ 120 mg/l	≤ 200 mg/l	≤ 25 mg/l	≤ 25 mg/l
	pH	-	6 – 9	5.5 – 9	6 – 9	6 – 9
	E-Coli	-	-	-	≤ 100 counts/100 ml	≤ 400 counts/100 ml
	Dissolved oxygen (DO)	-	-	-	5 – 7 mg/l	5 – 7 mg/l
	Oil and grease	-	≤ 5 mg/l	≤ 10 mg/l	≤ 40 µg/l, N	≤ 40 µg/l, N
	Ammoniacal nitrogen (river)	-	≤ 10 mg/l	≤ 20 mg/l	≤ 0.3	≤ 0.3
Silt trap and sediment basin discharge	Turbidity	≤ 250 NTU	-	-	-	-
	Total suspended solids	≤ 50 mg/l	-	-	-	-

^a Second Schedule (Regulation 7), Environmental Quality (Sewage) Regulations 2009, Environmental Quality Act 1974.

Standard A: For the areas upstream of surface or above subsurface water supply intakes
Standard B: Applicable to any other inland waters or Malaysian waters

^b National Water Quality Standards for Malaysia. Refer to Annex H for details.

Class IIA: Water Supply II – conventional treatment required
Fishery II – sensitive aquatic species
Class IIB: Recreational use with body contact

N - No visible floatable materials or debris or no objectionable odour, or no objectionable taste.

TABLE 2. WATER QUALITY STANDARD

Table 3. Ambient air quality standard

Aspects	Parameter	New Malaysia Ambient Air Quality Standard (2020)
Ambient air	Particulate Matter (PM ₁₀) (24 hr)	≤ 100 µg/m ³
	Particulate Matter (PM _{2.5}) (24 hr)	≤ 35 µg/m ³
	SO ₂ (24 hr)	≤ 80 µg/m ³
	NO ₂ (24 hr)	≤ 70 µg/m ³
	O ₃ (8 hr)	≤ 100 µg/m ³
	CO (8 hr)	≤ 10 µg/m ³

***TABLE 3.
AMBIENT AIR
QUALITY
STANDARD***

Table 4. Noise limits and control standard

Time	Noise sensitive receptors	Suburban residential	Urban residential	Commercial and mixed development	Industrial
FIRST SCHEDULE - NEW DEVELOPMENT					
Day (7.00 am – 10.00 pm)	$L_{Aeq}^a \leq 55$ dBA	$L_{Aeq} \leq 60$ dBA	$L_{Aeq} \leq 65$ dBA	$L_{Aeq} \leq 65$ dBA	$L_{Aeq} \leq 70$ dBA
Night (10.00 pm – 7.00 am)	$L_{Aeq} \leq 50$ dBA	$L_{Aeq} \leq 55$ dBA	$L_{Aeq} \leq 60$ dBA	$L_{Aeq} \leq 60$ dBA	$L_{Aeq} \leq 65$ dBA
FOURTH SCHEDULE - NEW ROADS AND/OR REDEVELOPMENT OF EXISTING ROADS					
Day (7.00 am – 10.00 pm)	$L_{Aeq} \leq 60$ dBA	$L_{Aeq} \leq 65$ dBA	$L_{Aeq} \leq 65$ dBA	$L_{Aeq} \leq 70$ dBA	$L_{Aeq} \leq 75$ dBA
Night (10.00 pm – 7.00 am)	$L_{Aeq} \leq 55$ dBA	$L_{Aeq} \leq 60$ dBA	$L_{Aeq} \leq 60$ dBA	$L_{Aeq} \leq 65$ dBA	$L_{Aeq} \leq 70$ dBA
FIFTH SCHEDULE - NEW RAILWAY & TRANSIT LINES AND RE-ALIGNMENTS					
Day (7.00 am – 10.00 pm)	$L_{Aeq} \leq 60$ dBA	$L_{Aeq} \leq 60$ dBA	$L_{Aeq} \leq 65$ dBA	$L_{Aeq} \leq 70$ dBA	$L_{Aeq} \leq 75$ dBA
Night (10.00 pm – 7.00 am)	$L_{Aeq} \leq 55$ dBA	$L_{Aeq} \leq 55$ dBA	$L_{Aeq} \leq 60$ dBA	$L_{Aeq} \leq 65$ dBA	$L_{Aeq} \leq 75$ dBA
SIXTH SCHEDULE - CONSTRUCTION, MAINTENANCE AND DEMOLITION WORK					
Day (7.00 am – 7.00 pm)	$L_{10} \leq 75$ dBA $L_{max} \leq 90$ dBA	-	-	$L_{10} \leq 80$ dBA	$L_{10} \leq 80$ dBA
Evening (7.00 pm – 10.00 pm)	$L_{10} \leq 70$ dBA $L_{max} \leq 85$ dBA	-	-	$L_{10} \leq 80$ dBA	$L_{10} \leq 80$ dBA
Night (10.00 pm – 7.00 am)	$L_{10} \leq 70$ dBA $L_{max} \leq 85$ dBA	-	-	$L_{10} \leq 75$ dBA	$L_{10} \leq 80$ dBA

^a Recommended Permissible Sound Levels.

NOTE. Refer Guidelines for Environmental Noise Limits & Control 2019.

TABLE 4. NOISE LIMITS AND CONTROL STANDARD

Table 5. Vibration limits and control standard

Aspects	Parameter	Planning Guidelines for Vibration Limits and Control of the Environment (Department of Environment)
Vibration	Vertical Vibration Peak Velocity (mm/s)	Not more than 3 mm/s at receiver location or across real property boundary.

***TABLE 5.
VIBRATION
LIMITS AND
CONTROL
STANDARD***

Table 6. Coral reef control standard

Aspects	Parameter	Observation
Coral reef health	Live coral cover according to Reef Check Procedure	Maintain live coral cover of fair category (26 % to 50 % live coral cover).

***TABLE 6. CORAL
REEF CONTROL
STANDARD***

Table 7. Water quality monitoring parameters to be monitored

Parameters to be monitored weekly	Parameters to be monitored monthly
Turbidity (ensure visibility more than 3 m)	Arsenic (III)
pH	Lead
Total suspended solids (TSS)	Oil and grease
Dissolved oxygen (DO)	Faecal coliform
Oil and grease film sightings	Ammoniacal nitrogen (NH ₃ -N)
Sea surface temperature	Phosphate

NOTES:

1. Refer Annex H for Malaysia Marine Water Quality Criteria and Standard.
2. Reports for parameters monitored to be submitted weekly to Department of Fisheries Malaysia and DOE.

***TABLE 7.
WATER
QUALITY
MONITORING
PARAMETERS
TO BE
MONITORED***

TABLE 8. THE FREQUENCY OF SUBMISSION FOR EAR & ECAR

Table 8. Period for submission of documents by the contractor

Documents	No. of copies	Reporting frequency	Duration (as required by JKR MALAYSIA)	Report submission
For Peninsular, including Federal Territories				
Environmental Management Plan (EMP)	5 hardcopies	Once only (to be updated when necessary)	EMP shall be approved before commencement of site clearing and earthwork activities on site ^a	For EIA, submission to DOE and JKR Malaysia For non-EIA, submission to JKR Malaysia only
Environmental Monitoring Report (EMR)	3 hardcopies, 1 softcopy or as required by DOE	Monthly	14 days after monitoring ^b	For EIA, submission to DOE and JKR Malaysia For non-EIA, submission to JKR Malaysia only
Environmental Audit Report (EAR)	3 hardcopies, 1 softcopy	Quarterly	14 days after audit ^c	For EIA, submission to DOE and JKR Malaysia For non-EIA, submission to JKR Malaysia only
Environmental Closure Audit Report (ECAR)	3 hardcopies, 1 softcopy	Once only	14 days prior to issuance of Certificate of Practical Completion (CPC) ^c	For EIA, to DOE and JKR Malaysia For non-EIA, Submission to JKR Malaysia
For Sarawak				
Environmental Management Plan (EMP)	5 hardcopies	Once only (to be updated when necessary)	As directed by S.O./P.D. ^a	For EIA, submission to NREB and JKR Malaysia For non-EIA, submission to JKR Malaysia
Environmental Monitoring Report (EMR)	5 hardcopies	Quarterly	14 days after monitoring ^b	For EIA, submission to NREB and JKR Malaysia For non-EIA, submission to JKR Malaysia only
Environmental Compliance Audit Report (ECAR)	4 hardcopies, 1 softcopy	2 times internal audit and 1 time external audit	30 days after audit ^c	For EIA, submission to NREB and JKR Malaysia For non-EIA, submission to JKR Malaysia only

Table 8. Period for submission of documents by the contractor (continued)

Documents	No. of copies	Reporting frequency	Duration (as required by JKR MALAYSIA)	Report submission
For Sabah				
Environmental Compliance Report (ECR)	1 hardcopy	Monthly to quarterly (depends on duration of the project)	Not applicable	Submission to EPD Sabah. Additional 1 hardcopy to Sandakan Branch (for EIA/PMM projects located at the East Coast Region of Sabah)
<p>^aTo be carried out by registered environmental consultant and shall be approved prior to commencement of any works on site.</p> <p>^bTo be carried out by accredited laboratory.</p> <p>^cTo be carried out by registered third-party environmental auditor.</p>				

Senarai Kuantiti(BQ) dan Kaedah Pengukuran Piawai bagi Kerja Perlindungan Alam Sekitar

Annex B (normative)						
Examples of Bills of Quantity (BQ) for environmental protection works						
No.	Description of works	Unit	Qty	Rate	Amount	
					RM	Cent
	NON – PHYSICAL WORKS					
1	<u>ENVIRONMENTAL IMPACT ASSESSMENT (EIA)</u>					
1.1	Preparation, submission and approval of EIA Report by environmental consultant registered with DOE/NREB/EPD.	sum				
2	<u>SOCIAL IMPACT ASSESSMENT (SIA)</u>					
2.1	Preparation and submission of SIA Report by SIA consultant.	sum				
3	<u>ENVIRONMENTAL MANAGEMENT PLAN (EMP)</u>					
3.1	Preparation of EMP shall be deemed to include the cost of any survey required, literature, references, consultation and the production of the documents. It shall also include the cost for the engagement of registered environmental consultant required for carrying out the preparation of the said report in accordance with DOE Guidelines.	sum				
	For EMP, preparation, submission, approval and updating (if necessary) (5 copies) by environmental consultant, including:					
	a) Land-Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2)*					
	b) Erosion and Sediment Control Plan*					
	*if applicable					
	Additional management plan, if required:					
	a) Construction Solid Waste Management Plan	sum				
	b) Flora Management Plan	sum				
	c) Wildlife/Fauna Management Plan	sum				

Contoh Amalan Pengurusan Terbaik (BMP)

Annex F (informative)

Examples of Best Management Practices (BMPs)

F.1 Dust and mud control

Construction entrance stabilisation



Rumble pad



Jet spray



Wash trough

SOURCE: *Manual Panduan Pemeriksaan BMPs untuk Kawalan Hakisan dan Sedimen, Jabatan Alam Sekitar Malaysia*

F.2 Erosion control

Mulching



SOURCE: *Manual Panduan Pemeriksaan BMPs untuk Kawalan Hakisan dan Sedimen, Jabatan Alam Sekitar Malaysia*

Lukisan Standard yang terkini untuk Kerja Perlindungan Alam Sekitar (Ogos 2019)

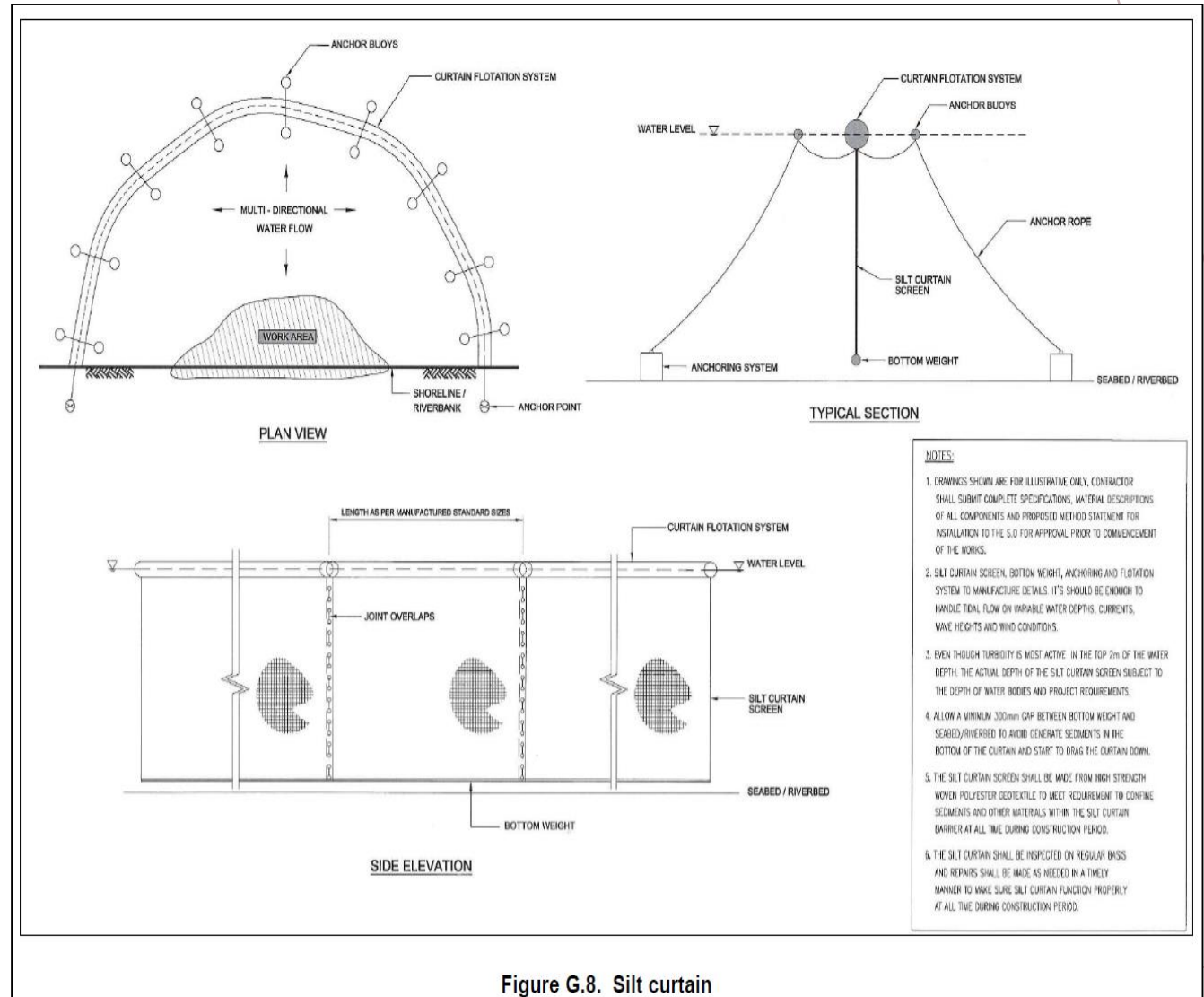


Figure G.8. Silt curtain

PERBEZAAN DI ANTARA JKR STANDARD EPW 2020 & ARAHAN TEKNIK (JALAN) ATJ 16/03 – PINDAAN 2015

BIL.	PERKARA	ATJ 16/03 – EDISI 2015	STANDARD JKR 2020
1.	Format	Berdasarkan format Arahan Teknik Cawangan Jalan JKR	Berdasarkan format Standard Industri SIRIM
2.	Senarai Kandungan	<ol style="list-style-type: none"> 1. Introduction 2. Environmental Requirements 3. Contractual Requirements 4. Specifications 5. Methods of Measurement 6. Bill of Quantities 7. Best Management Practises 8. Standard Drawings and Figures <p>APPENDIX 1- 5</p>	<ol style="list-style-type: none"> 1. Introduction 2. Scope 3. Normative References 4. Terms and Definitions 5. General Requirements <ol style="list-style-type: none"> 4.1 Non-Physical Works 4.2 Physical Works 1. Roles and Responsibilities <p>Annex A -H</p>
3.	Jenis Pembangunan	Fokus kepada projek jalan	Sesuai digunakan bagi semua projek yang dilaksanakan oleh JKR termasuk infra, bangunan dan lain-lain

PERBEZAAN DI ANTARA JKR STANDARD EPW 2020 & ARAHAN TEKNIK (JALAN) ATJ 16/03 – PINDAAN 2015

BIL.	PERKARA	ATJ 16/03 – EDISI 2015	STANDARD JKR 2020
4.	Rujukan keperluan Perundangan, dasar, polisi dan spesifikasi teknikal	Berdasarkan keperluan pada tahun 2015 dan masih merujuk beberapa amalan yang tidak berkuatkuasa seperti Penilaian Awal Tapak (PAT) yang telah dimansuhkan oleh JAS.	Berdasarkan keperluan yang terkini di mana banyak perubahan perundangan, dasar dan keperluan teknikal telah dikemaskini.
5.	Skop Pemakaian	Hanya fokus kepada keperluan di Semenanjung Malaysia dan Labuan sahaja (Melibatkan Jabatan Alam Sekitar, JAS)	Meliputi keperluan di seluruh Malaysia (Semenanjung Malaysia, Sabah dan Sarawak) yang melibatkan JAS, JPAS dan NREB.
6.	Penyediaan Bill of Quantities (BQ)	Berdasarkan keperluan pada tahun 2015	Telah dikemaskini berdasarkan keperluan semasa dan disesuaikan dengan Malaysia Civil Engineering Standard Method of Measurement 2 (MyCESMM2) yang dikeluarkan oleh CIDB

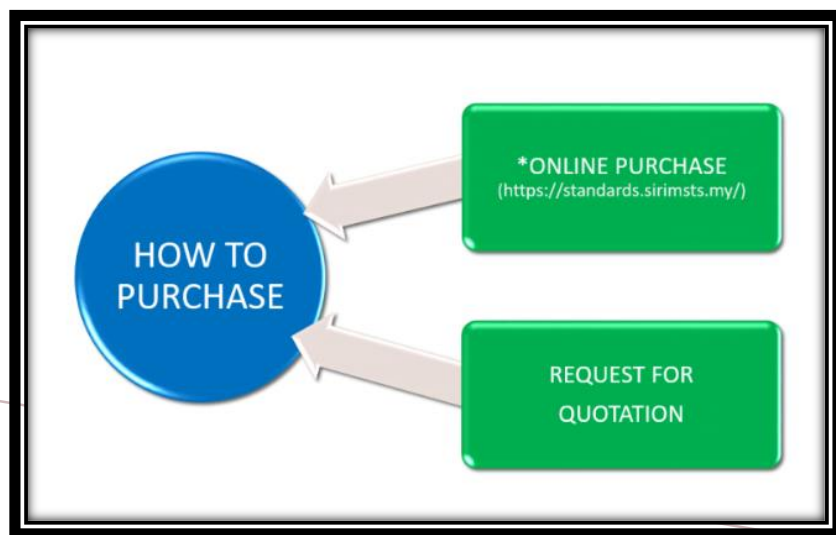
PERBEZAAN DI ANTARA JKR STANDARD EPW 2020 & ARAHAN TEKNIK (JALAN) ATJ 16/03 – PINDAAN 2015

BIL.	PERKARA	ATJ 16/03 – EDISI 2015	STANDARD JKR 2020
7.	Methods of Measurement for environmental protection works	Berdasarkan keperluan pada tahun 2015	Telah dikemaskini berdasarkan keperluan semasa dengan mengambilkira input dari pasukan tapak bina projek JKR
8.	Examples of Best Management Practises (BMP)	Berdasarkan keperluan pada tahun 2015	Telah dikemaskini dan dimasukkan teknologi baru seperti Erosion control blanket (ECB), fiber rolls, geobags dan sebagainya
9.	Drawings for environmental protection works	Berdasarkan keperluan pada tahun 2015	Telah dikemaskini mengambilkira keperluan spesifikasi teknikal semasa dengan kerjasama dari BRJ, Cawangan Jalan. Lukisan telah ditambahbaik agar ianya adalah mudah difahami dan praktikal untuk dilaksanakan.

JKR STANDARD 3 : 2020 ENVIRONMENTAL PROTECTION AND ENHANCEMENT WORKS FOR PROJECTS

JKR Standard berkenaan boleh dibeli dari pihak SIRIM melalui laman web

<https://www.sirimsts.my/our-services/sales-of-standards/>



Harga Standard :-

Softcopy – RM 186.00

Hardcopy – RM 206.00

SALES OF SIRIM INDUSTRY STANDARDS/MALAYSIAN ACT

Pn. Wan Rosmawati – 03-5544 6109 / wrosma@sirim.my

TERIMA KASIH