STEEL SRTUCTURE FABRICATION

SVR ENGINEERING SDN. BHD.
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PREFACE

Steel structure fabrication and surface treatment Plant

The industrial steel structure fabrication plant located at Rawang. Steel structure fabrication began at the company's plant in the late 2000s, and — in line with the company's policy, it has undergone continuous development ever since.

Initially, we performed work for affiliated plants within small companies, repairing machines and equipment with traditional machinery and technology, and making small steel structures.

The real breakthrough came in 2003 with the company's investment in several cutting and milling machines and venture into building steel structural works.

We ventured into precesion fabrication like TNB's cooling systems, tunnel ribs and Steel Structure for Workshop Building and bridges. Hence the plant at Rawang were upgraded with more machineries and tools.

The workforce comprises an average of 20 qualified and certified engineers, technicians, welders, fitters, painters and turners.

As of today, the company is well prepared in fabrication and erection of all kinds of steel structure for building, bridges and even on precision fabrication and value engineering in steel structures.

FABRICATION WORK FLOW CHART

FABRICATION DETAILING / SHOP DRAWING

MATERIAL PROCUREMENT

ASSIGNMENT OF FABRICATION TEAM

SURFACE CLEANING

QA/QC

CUTTING AND MACHINING
- Shearing & cropping
- Flame cutting or burning
- Arc Plasma cutting

QA/QC

PUNCHING & DRILLING

QA/QC

STRAIGHTENING, BENDING AND ROLLINNG

QA/QC

FITTING & REAMING

QA/QC

FASTENING METHOD

QA/QC

FINISHING

QA/QC

SURFACE TREATMENT
- Metal Coating
- Paint Coating

QA/QC

TRANSPORTATION

QA/QC

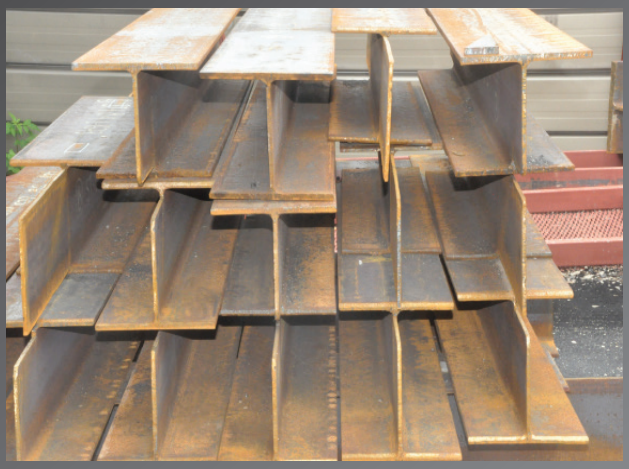
ERECTION

QA/QC

HANDING OVER

STEEL STRUCTURE FABRICATION FACILITY

SVR ENGINEERING SDN. BHD.



Cutting and Machining

Following surface preparation, cutting to size and shape is always the first process to be carried out, and this is done by any of the following methods.

1. Shearing and cropping

2. Flame Cutting or Burning

3. Arc Plasma Cutting

Punching and Drilling

We have a range of machines, which can form holes for connections in structural steelwork. The traditional drilling machine is the radial drill, a manually operated machine, which drills individual holes in structural steelwork and a magnetic drilling machine, which used for in-situ drilling activity especially for longer and bigger members.

Fitting and Reaming

Before final assembly, the component parts of a member are fitted-up temporarily with bolts and small amount of welds. The fitting-up operation includes attachment of previously omitted splice plates and other fittings and the correction of minor defects found by the inspector.

In bolted work, especially when done manually, some holes in the connecting material may not always be in perfect alignment and small amount of reaming may be required to permit insertion of fasteners. In this operation, the holes are drilled, 4 to 6 mm smaller than final size, then after the pieces will be assemble, the holes are reamed by electric or pneumatic reamers to the correct diameter,

Fastening Methods

The strength of the entire structure depends upon the proper use of fastening methods. There are two methods of fastening will be employed for this project namely bolting and welding. All welding works will be in accordance to BS 5135 standard. The joints are to be welded with 8mm thickness (Filled Weld) whereas the chequered plate joints will be sealed with 2mm sealing weld. The types of welding involve will be Manual Metal Arc Welding (MMA) and Metal Active Gas Welding (MAG).

Surface Treatment

Structural steelwork is protected against corrosion by applying metal or paint coating in our fabrication yard after sand blasting works

Metal Coatings

The corrosion protection afforded by metallic coating largely depends upon the surface preparation, coating and its thickness will be in accordance to the specification stipulated in the general note of the construction drawing. Commonly used methods of applying metal coating to steel surfaces are metal spraying for the structure and galvanise for the chequered plate.

Paint Coatings

Painting is the principal method of protecting structural steelwork from corrosion. The primer (anti-rust) is applied directly on to the cleaned steel surface. Its purpose is to wet the surface and to provide good adhesion for subsequently applied coats. Primers for steel surfaces are also usually required to provide corrosion inhibition.

The intermediate and final coats are applied to build the total film thickness of the system as specified in the drawing.

SVR ENGINEERING'S BLASTING AND SURFACE TREATMENT FACILITIES

Sand Blasting Works in progress

Site visit by PDP - MMC Gamuda

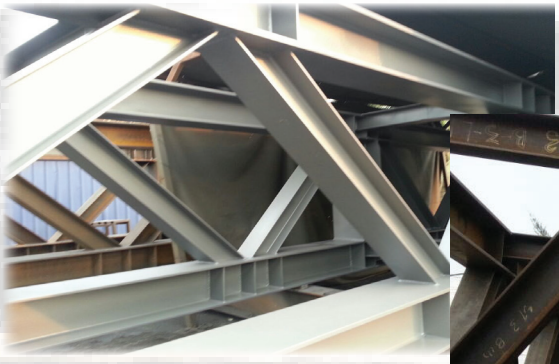
Blast cleaning equipment

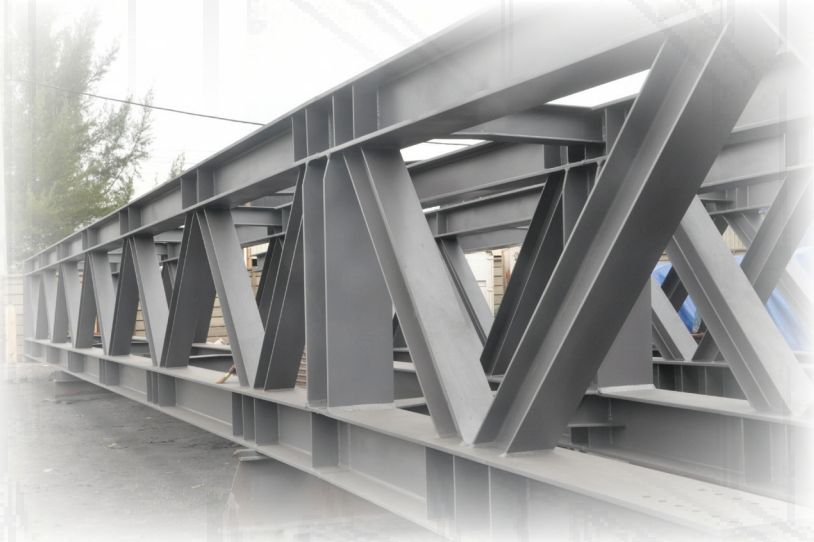
The compressed air supply used for blast cleaning shall be free from water and oil. Adequate separator and traps should provided , installed in the coolest part of the system , they shall be emptied regurley to prevent carry over of oil & water . Accumulation of oil and moisture shall be removed from air receiver by regular purging.

Air compressor shall not be allowed to deliver air at temperature above 110c

Abrasive blast cleaning equipment shall be an intrinsically safe construction and equipped with a remote shut – off valve triggered by the release of a dead man's handle at the blasting nozzle. When air operated equipment is used , the operator's hood or head gear shall be ventilated by clean , cool air served through a regulator filter , to prevent blast cleaning residues from being inhaled.

Sand Blasted Structure





Steel Structure completed with Coating of Primer, Under Coat ing and Finishing Coating

CMD CHUGOKU PAINTS (MALAYSIA) SDN. BHD. *(200308-A)*

TECHNICAL PAINT SPECIFICATION & PROCEDURE

Customer: **SVR ENGINEERING SDN BHD (643966-D)**
Project: Industrial Paints - MRT Project
Ref. No.: 14-Q446
Date: 08 September 2014

System	No. of Coat	Generic Type	Chugoku Products	Paint Color	Application Method	Vol. Solid %	DFT mic.	Theo. Coverage m2 / Lit.	Painting Interval at 30 C Min. (hrs)	Painting Interval at 30 C Max. (days)	Std. Packing Lit.	Thinner Used
	Painting and Coating System											
1	Coating System C : Initial Painting											
		Surface Preparation:	Surface to be blast cleaned to standard of SA 2.5 or equivalent Surface profile to be at between 40 - 80 microns.									
	1 F/C	Inorganic Zinc Silicate	GALBON S HB 100 PZ	Zinc Grey	AL, C	60	75	8.00	18	-	8.8	Inorganic Thinner H
*either 1F/C or 2 F/C	1 F/C	Epoxy MIO	UNIVAN M	Grey	AL, C	75	125	6.00	8	-	20.0	Epoxy Thinner A
	1 F/C	High Build Modified Epoxy	UMEGUARD SX	-	AL, C, R	57	125	4.56	12	-	20.0	Epoxy Thinner A
							325					
		Thinner for IOZ paint	INORGANIC THINNER H			10% of paint volume					20.0	
		Thinner for Epoxy paint	EPOXY THINNER A			10% of paint volume					20.0	

Remarks:
1. Paints Coverage shown are calculated base on **Theoretical**.
2. Loss Factor shall base on 40 - 50 % on actual application condition.
3. Final / Finishing color to be advice by client.
F/C = Full Coating, T/U = Touch Up, AL = Airless Spray, C = Conventional Spray, R = Roller, B = Brush.

System C:
primer: 1 coat of inorganic zinc silicate paint (MDFT 75 µm),
undercoat: 2 coats of high build micaceous iron oxide epoxy paint (MDFT 125 µm)
finish: 1 coat of high build amine adduct cure epoxy paint (MDFT 125 µm)
Minimum total DFT: 325 µm

COMPLETED PROJECTS

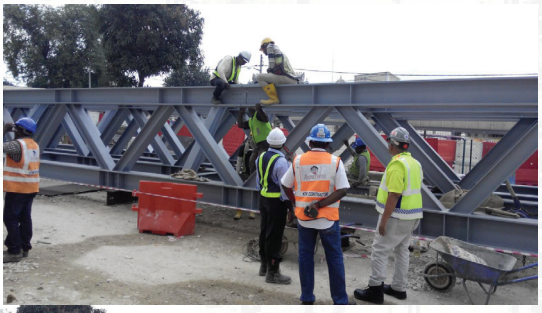



FABRICATION AND ERECTION OF PROPOSED TEMPORARY PEDESTRIAN BRIDGE AND TICKETING COUNTER AT JALAN REKO KAJANG FOR KVMRT PACAKAGE V8 AT KAJANG STATION

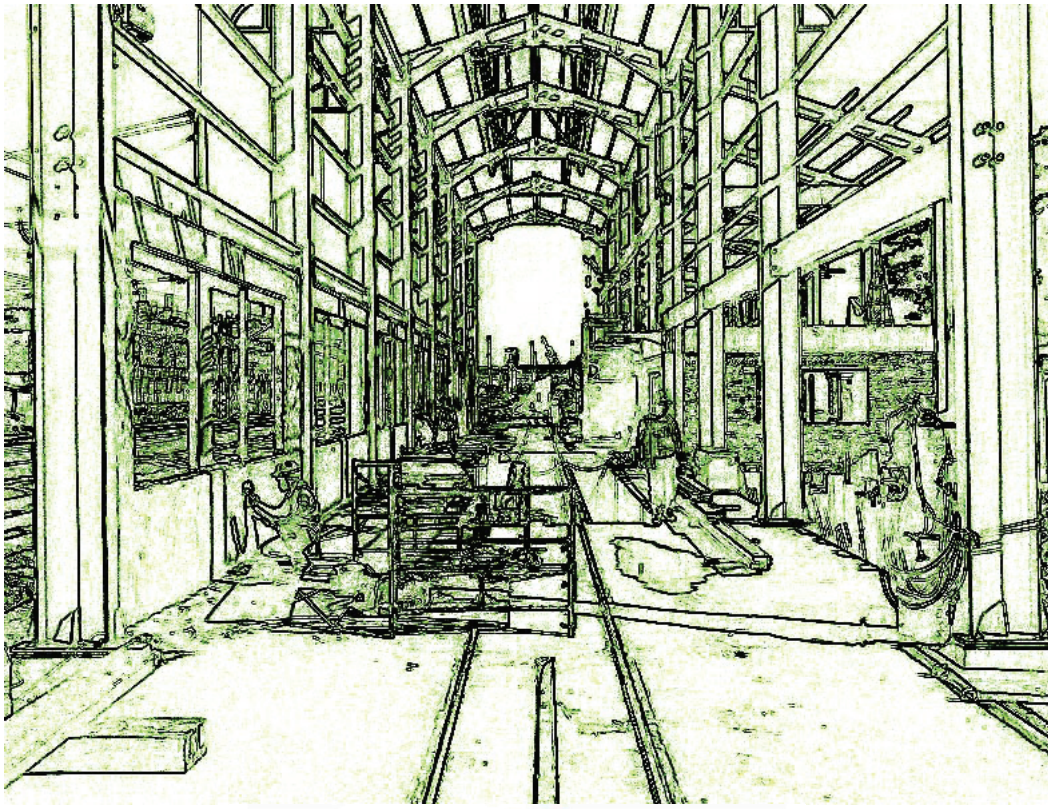


CONSTRUCTION AND COMPLETION OF WORKSHOP FOR KTMB AT KAJANG

ONGOING PROJECTS


CONCSTRUCTION AND COMPLETION OF MSPR9 ACCESS RAMP - STEEL BRIDGE ACROSS KTMB TRACK LINES AT KAJANG STATION



SVR ENGINEERING SDN. BHD. (Co. NO. 843996 D)

ASSOCIATE COMPANY OF SDL EMPIRE SDN. BHD.