



total steel building solutions



# product brochure

## structural steel



# welcome to Zamil Steel's Structural Steel



**Hanoi Plant** Total Area – 41,200 sq.m  
Fabrication Capacity, 5,000 MT per month



**Dong Nai Plant** Total Area – 45,150 sq.m  
Fabrication Capacity, 4,500 MT per month

Since the year 1977, **Zamil Steel Industries** has been specialized in the design, fabrication and supply of Pre-Engineered Steel Buildings. Over the past 3 decades, Zamil Steel has grown from a single division Pre-Engineered Steel Buildings manufacturer into a leader in the growing field of steel fabrication in Asia, Africa and Europe. Currently, the premier products of Zamil Steel include pre-engineered steel buildings, structural steel, process equipment, high-rise buildings, open web steel joists and decking, transmission and telecommunication towers.

In line with the vision to be the premium solution provider in the steel buildings industry, Zamil Steel diversified into the fabrication of structural steel and plate works for various industrial and commercial applications in 1983. Growing with sustainable successes, Zamil Steel is now widely recognized as the Middle East leading structural steel fabricator.

With an excellent track record in structural steel fabrication for over two decades in the Middle East, Zamil Steel extended its structural steel fabrication division to Vietnam in 2008 targeting the highly potential industrial prosperity in Vietnam and the Asia Pacific region. **Zamil Steel Vietnam** (ZSV), a joint-

venture between Zamil Industrial Investment Co. (ZIIC) and Mitsui & Co., has invested in a new comprehensive structural steel fabrication line at the state-of-the-art manufacturing facility in Dong Nai, Vietnam.

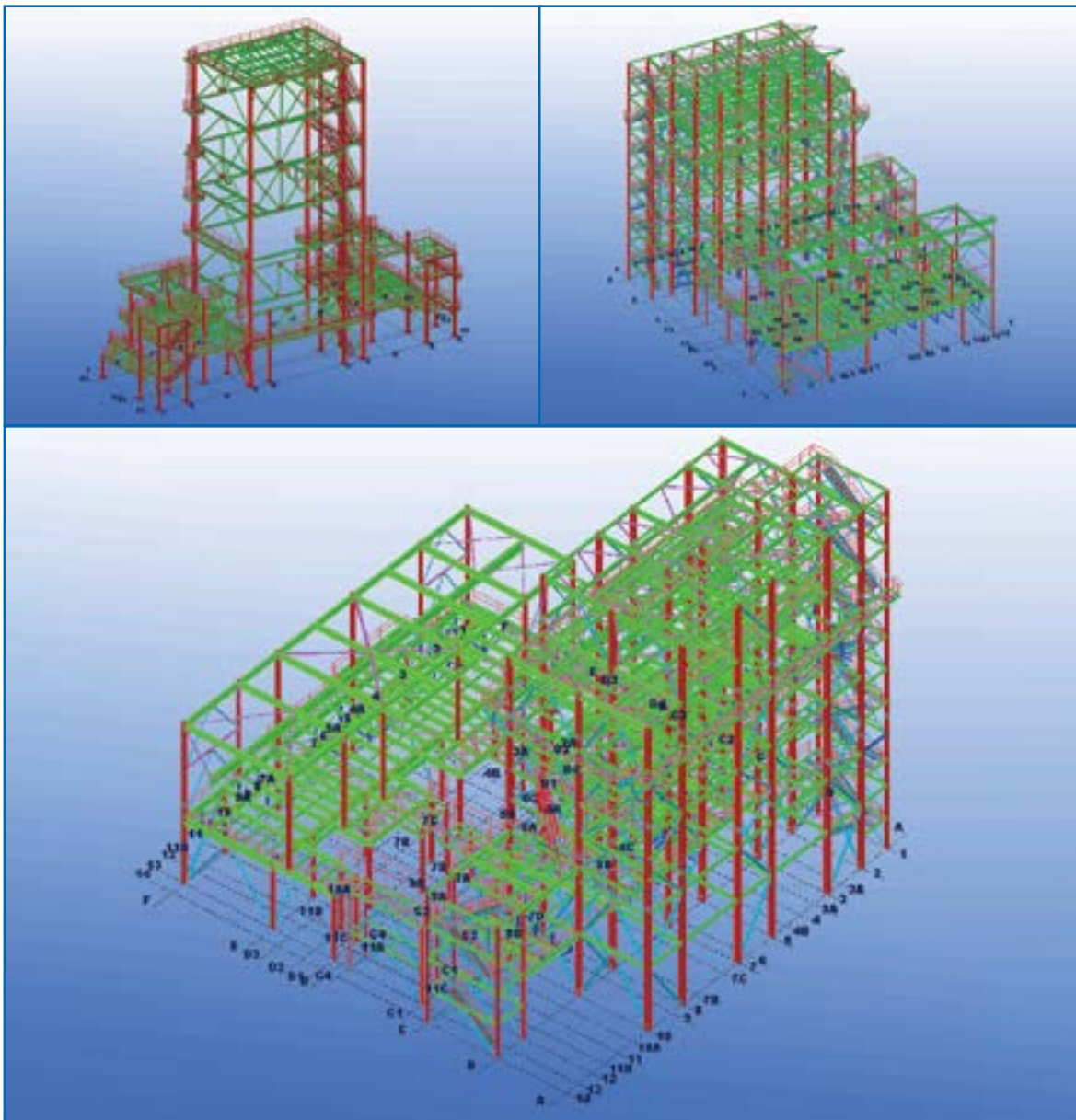
ZSV's Structural Steel fabrication is controlled by state-of-the-art Computer Numerical Coded (CNC) equipment, it also utilizes the latest Engineering software for detailing & connection design.

Together with Pre-Engineered Steel Buildings, **Structural Steel** is another extensive product line which enables Zamil Steel to manufacture and supply Steel buildings of various applications with diverse requirements.



# structural steel model

(3D modelling using Zamil Structural Steel software)



3D MODELLING USING ZAMIL STRUCTURAL STEEL SOFTWARE



# Zamil Steel's Strength on Structural Steel

## Short Turn-over Days and Practical Conceptual Estimating Strategy

Zamil Steel Vietnam Structural Steel Department (SSD) Estimation Section, adopts Conceptual Estimating and Pricing Strategy.

Whereas, Conceptual Estimating is not just making a good guess at the cost of the steel in a project. It is listening to the owner and understanding the project's goals. It is understanding structural systems, assemblies and their costs. It is comprehending the price of steel, not when it leaves the fabricating shop, but when it is in place on the structure. It is the search for a more efficient and productive way to manage the steel process."

Zamil Steel Vietnam Estimating Team has the skill, expertise and experience to look at the performance specifications and footprint of a structure for the specific project and develop a budget for all of the activities relating to steel in the structure: detailing, fabricating, painting, transporting and erecting.

After receiving New Request for Quotation, Customers BOQ, Drawings and other relevant documents from our Sales Office, Estimating Team conducts initial conceptualization per project basis, in where they can immediately raised some relevant concerns and address clarifications.

Once all relevant information are provided and clarifications were addressed by the customer, Estimating Engineer will proceed with the pricing stage and preparation of Proposal Offer. A series of review will be set-up to make sure that All assumptions and Deviations was made and the price is reasonable enough to meet Customer Satisfaction.

Zamil Steel Structural Steel Estimating Section's objective focuses on the vision to be the "Provider of the Most Competitive & Precise Structural Steel Prices in the Market in this Region and achieved Total Customer Satisfaction".

## Systematic Project Management

In order to achieve the desired outcome on every project, Zamil Steel has a project management team of experienced engineers and skillful professionals dedicated to plan and manage all products and services related activities throughout the project life cycle.

Upon the award of a project to ZSV, a Project Engineer will be assigned to handle all technical and commercial matters associated with the project from inception to completion. The project Engineer will also prepare a master delivery plan using our in-house scheduling software defining all milestones and activities, taking into account all the special requirements, size and complexity of the project.

Throughout the execution phase, the Project Engineer in-charge monitors, coordinates and reports the progress of the project with all related departments, using ZSV's coordinated tracking software (Oracle ERP System). This results in effective and efficient supply, thus cutting production lead time, and ensuring faster delivery schedules.

Zamil Steel Project Management's Advantages are:

- Comprehensive in-house scheduling software that generates global fabrication and delivery master plan.
- Timely project's drawings execution as per customer required schedule and quality plan.
- Coordinated tracking software (Oracle ERP System) to monitor turnaround time from Purchasing to Shipment.
- Integrated process that optimizes fabrication time, thus ensuring timely schedule.

## Strong Technical & Engineering Expertise

Zamil Steel can serve clients in various engineering and contracting sectors and offer professional expertise that covers all stages of design from conceptual to completion with due consideration of budget and time limitations. In the design stage, especially in the preliminary stages, we give a great value on the optimization of the design for both structural systems and materials.



The experienced and professional detailing engineers of Zamil Steel utilize up-to-date software for detailing and connection design such as:

- STAAD PRO for structural analysis design.
- Ram connection design for structural steel system.
- Up-to-date CAD packages such as TEKLA steel structure and AutoCAD to provide accurate and high quality engineering drawings.
- In-house design software for detailing.
- Team of professional engineers for CAD data linkage to our Computer Numerical Coded (CNC) equipment for accelerated fabrication.

### State-of-the-art Fabrication

Zamil Steel continuously strive to find the latest methods, technologies and machines to ensure the highest levels of productivity, quality and timely delivery for clients' satisfaction.

With a covered area of more than 50,000sqm of manufacturing facilities, ZSV ensures products of highest quality and precision by combining up-to-date engineering software with comprehensive modern production equipment like:

- Computer Numerical Coded (CNC) Drill Lines complete with drills and band saws for raw materials and plates drillings
- CNC flame cutting equipment
- CNC fully automatic Plate Drilling machines
- CNC Band Saw

- CNC Intersecting Bevel Pipe Cutting Machine and the AR-160 Section bending Machine can precisely handle the profile cutting of round or square tubes and bending hollow and HR sections to produce elegant architecture.
- CNC fully automatic Angle line
- CNC Torch cutting equipment
- CNC Plasma cutting equipment
- Fully Automatic Submerged Arc Welding (SAW) Lines
- Mig Welding machines
- Stud Welding machines
- In house 16 wheel shot blasting machinery
- 75 Overhead and Jib Cranes
- NTD equipment for weld quality verification
- Comprehensive container loading facilities
- Highly qualified fitters and welders certified to AWS/ASME

### Seamless Quality Assurance and Control

A highly qualified and equipped internal Quality Control department ensures all Zamil Steel products are manufactured in accordance to stringent international standards. All inspection activities are carried out by engineers certified by professional bodies as follows:

- America Society of Non-destructive Testing (ASNT) Level III, Level II,
- America Welding Society (AWS)
- British Gas Approved Scheme-Certification Scheme for Welding and Inspection Personnel. (BGAS-CSWIP)

With a commitment to consistently produce products of the highest standards, ZSV has been certified and accredited by international professional bodies such as:

- ISO 9001:2008 Certification by BVQI, UK since 2001
- S1 fabricator status Accreditation by Singapore Structural Steel Society (SSSS) since 2003
- Grade R fabricator status Certification by Japan's Ministry of Land Infrastructure and Transport (MLIT) in 2007.
- Certificate of Class 1 Panel Roofs in 2008 by FM Approvals, USA for the premium quality of MaxSEAM Standing Seam Metal Roofs System.
- IBS Certificate of CIDB by Construction Industry Development Board, Malaysia for its Steel/Metal Framing System in 2008
- Golden Dragon Awards by the Vietnam Economic Times in collaboration with MPI for the Best Product (Construction) for 13 consecutive years since 2003

### Site Support Supervision Services

As part of Zamil Steel Vietnam long term strategy to provide proper support and services to our Customers before and after Sales Services, Structure Steel department who has the role of keeping our Customers satisfied from the date of placing the order with us until building erection is completed.



The site support supervision services provided by this department are; but not limited to:

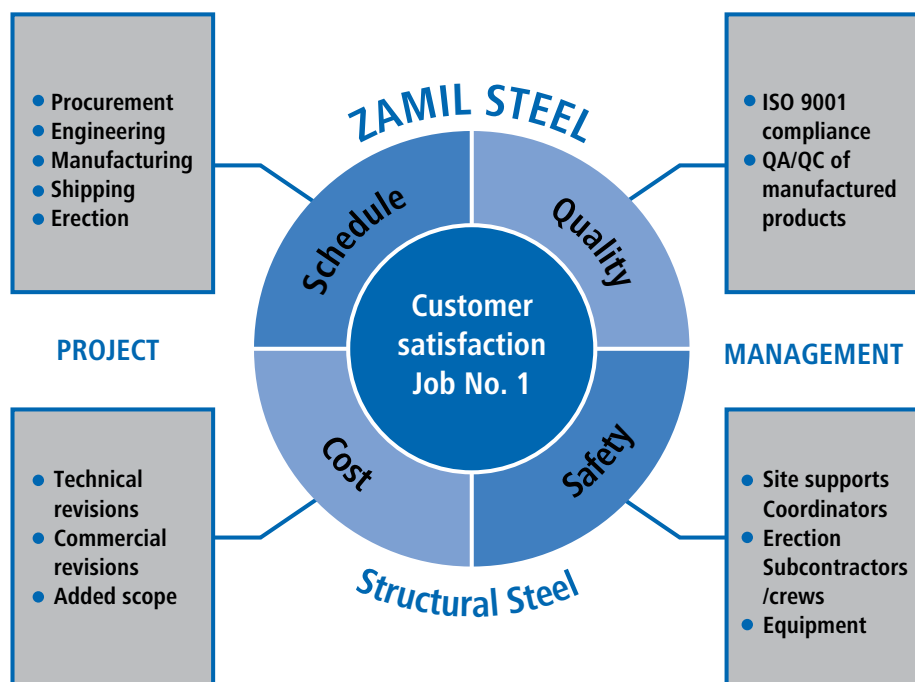
Provide, free of charge, a professional Erection Coordinator to assist the Customer / Client or his engineers and / or the contractor by:

- Directing the contractor to the best way of material unloading as standard procedure.
- Checking jointly the received materials against the Packing List.

- Directing contractor on the proper storage of unloaded materials.
- Supervising and technical assisting during all installation stages, such as: setting up of Anchor Bolts, inspecting of high-strength bolts, checking the tolerance of main frame, etc.
- Acting as Zamil Steel representative and promptly responding to customer's requirements at site.
- Advising Erector/Installer how to modify/repair materials at job site (minor repairs).

- Reporting and resolving the claims, materials shortage, materials damages, mismatches, etc. with assistance from Head office.

With this added support and assistance to our customer Zamil Steel want to ensure that the buildings erected in accordance with Zamil Steel Erection Drawings, and following the proper and safe erection procedure.





# Zamil Steel's structural steel - unparalleled service

## Earlier Occupation

- Fit-out of the lower levels can commence much sooner because propping of formwork is not required.
- With steel construction, much of the work on site can proceed simultaneously.
- Early occupation means quicker returns on your investment.

## Reduce Risks

- Reduce exposure of onsite risks since fabrication is done at ZSV's manufacturing facilities.
- Minimize the weather effect that can cause delays if fabrication or painting is to be done onsite.
- Less trucks movement and on-site congestion.

## Larger Column Free Space

- The long spanning capacity of structural steel means more column free space.
- Architectural freedom is provided with smaller columns and enhanced spacing.

## "Future Proof" Investment

- Easier to make major changes to a building that has been constructed using structural steel.
- Beams and columns can be strengthened to take extra loads by welding on additional plates.
- New floor penetrations can be simply installed.
- The steel building can be extended in any direction.

## Advanced Technology

- Advances in engineering practices regarding fire protection which can reduce the cost of protecting a steel frame without compromising safety.
- Advances in Structural design results in more economical steel framed buildings.
- Advances in computer aided designs and drafting coupled with computer controlled fabrication improves the cost and speed of delivering high quality fabricated steel.

## Sustainable Construction

- Sustainability during the life of the building.
- Long lasting and durable.
- Easily renovated or refurbished.
- Easily strengthened or modified.
- Extend vertically or horizontally.

## Sustainability after the life of the building

- Demountable or Reusable as a complete building or as individual steel elements.
- Easily demolished.
- Recyclable.

## Cost Effectiveness

- The advanced technology, labor and time savings associated with steel construction make it an extremely cost effective solution.

# machinery list

No.	Machinery List in Hanoi Factory	Quantity	No.	Machinery List in Dong Nai Factory	Quantity
1	Shearing machine Material Capacity: 20mm plate thickness, 6020mm plate length; Model No.: HACO PSC 6020	1	1	Shear machine 350ton	1
2	Shearing Machine 0.6M	1	2	Small shear machine 250ton	1
3	Crank press for Slot punching machine Model No. PC-5 (IV)	1	3	Vacuum Lifter For Shearing M.C	2
4	Movable slot punching machine	2	4	Slot punching machine	1
5	Flange straightening machine Model No. LTJ-800	1	5	Movable slot punching machine	2
6	Flange line	1	6	Splice plate straightening press	2
7	Flame Planer (FP- 4000E)	2	7	Flange line machine	2
8	Punching machine ( Puma 110S)	1	8	Flame plane machine (multi torch cutting 7nos)	1
9	Iron worker machine (Hydracrop 110S)	3	9	Flame plane machine (multi torch cutting 7nos)	1
10	Radial drilling machine (VO 50,60 DIA )	2	10	Rod Bending MC	1
11	Auto welding machine line (SAW) Bay 3	1	11	Plate bending MC(Roller 3 nos 3000x12mm)	1
12	Auto welding machine line (SAW) Bay 5	1	12	Rod threading MC	3
13	Full Weld station (FCAW)	13	13	H-Beam Straightening machine	1
14	Fitting weld Station	7	14	Ironworker 110ton	3
15	Vacuum lifter crane, Cap.5000lbs	4	15	Ironworker 165ton	2
16	MaxSEAM roll former	3	16	Hydraulic Ironworkers Machine 165 ton	1
17	Purlin roll former line: DTR	1	17	Abrasive cutting disc	2
18	Sheeting Panel line – roll forming machine	1	18	Radial drilling MC	2
19	Curb panel press brake	1	19	Hydraulic Press brake 220ton	1
20	Panel cutting machine (hydraulic) type:MCT-0-8x1200	1	20	CNC Plasma flame cutter	1
21	CNC Folding machine - Model No. SL300 MB4001-10	1	21	CNC Drilling MC 1250	1
22	CNC Folding machine JZW800 Digital Control Folder Slitter	1	22	CNC Band saw 1270	1
23	Down spout lock former	1	23	CNC Plate Drilling machine	1
24	Rod threading machine No. FE099 98	2	24	CNC Coping MC	1
25	Press brake machine	1	25	CNC Roller Bending Machine	1
26	Press machine (hydraulic) Model: WS-110	1	26	Hydraulic band saw	1
27	Slitting machine	1	27	Bending canam MC	1
28	Abrasive Disc cutting machine PN 2414 NB	1	28	Shot Blasting & Peening machine	1
29	Crank Shaft press machine	1	29	Airless spray painting machine (Graco)	7
30	Sundry part dipping paint	1	30	Sundry part dipping paint	1
31	Airless Spray painting machine Model: EXTREME KING 68:1 (2pcs) and Model: EXTREME KING 33:1 (3pcs)	5	31	Autoweld machine line	2
32	LT-7.Auto-Fillet Welding Machine/Squirt mobile	2	32	Tacking station machine	2
33	Air compressor with dryer	3	33	Seam Welding machine	2
34	Overhead crane 10MT (6pcs) and 5MT (14pcs)	20	34	Welding station MIC	63
35	Travel crane	6	35	Welding station Tack	31
36	Jib crane	16	36	Welding TIC	1
37	Gantry crane	3	37	LT-7.Auto-fillet welding machine/Squirt mobile	7
38	Shot blasting machine with accessories	1	38	Stud welding machine	2
39	Rod bending machine; Model No. BENDHOR-50	1	39	Side Table	1
40	Magnetic drill 220V; Model: AO-3000;AO-3500;AO-5500	8	40	Saw line	1
41	PORTABLE AUTOMATIC GAS CUTTER; MODEL: IK-93 HAWK	2	41	Angle Splice line	1
42	PORTA-PUNCH 35 TON Model No.: HS11-1624	3	42	Angle Cutting line	1
43	Fork lift 5 tons/ 10 tons	2	43	Portable Rollformer (Maxseam MC)	2
44	Side loader	1	44	Overhead crane 15ton	3
45	CNC Drilling Machine FD-1635	1	45	Overhead crane 10ton	8
46	Crankpress MC 15 tons / 70 tons	7	46	Overhead crane 5ton	8
47	Plate Straight Press MC	2	47	Wall crane 2ton	19
			48	Zip crane 2ton	7
			49	Vacuum lifter crane 2ton	6
			50	Turning fiture	6
			51	Transfer cart	12
			52	Forklift 11ton	1
			53	Forklift 1.5ton	1



# inspection and testing plan (ITP) for structural steel materials

"Test #"	Nature of Inspection / Test	Extend of Insp. by ZS	Acceptance Norm	Record Format	Inspection
<b>1</b>	<b>Quality Control System Implementation</b>	100%	ZS QSM	CAR # QA-S-16	R/V
1.1	WPS/PQR/WQTR/NDT Procedure				
1.1.1	Welding Procedure Specifications	100%	AWS D1.1	WPS/PQR	V
1.1.2	Welders/ Operations Qualification Records	100%	AWS D1.1	WQTR	V
1.1.3	NTD Procedures/ NDT Technician certificates	100%	AWS D1.1	Procedures/ Certificates	R
1.1.4	Welding Consumables Receipt Inspection	On every P.O	AWS D1.1/P.O	NCR # QC-S-14 *	V
<b>2</b>	<b>MATERIAL RECEIPT INSPECTION</b>				
	<b>Steel Plates and Steel Sections:</b>		ASTM A572M (or) Equivalent Mat'l Specs	Insp.Rpt.# QC-S-01	
2.1	Verification of P.O requirements	100% MTC		Insp.Rpt.# QC-S-01	I
2.2	Fasteners: Bolts/Nuts/Washer				
	Verification of P.O requirements	100% TC	ASTM/ANSI	NCR # QC-S-14 *	I
2.3	Material Certificates	100%	ASTM/ANSI		R
<b>3</b>	<b>MATERIAL PREPARATION</b>				
	<b>Shearing/ Gas Cutting, Machining, Sawing, Drilling or Punching, Milling, Hard</b>				
3.1	Stamping				
3.2	Visual Inspection	10% Min.	AISC/ZS Drwgs.	NCR # S-14 *	I
3.3	Dimensional Inspection	10% Min.	AISC/ZS Drwgs	NCR # QC-S-14 *, Insp. Rpt.# QC-S-05D, Insp. Rpt.# QC-S-05E*	I
<b>4</b>	<b>FABRICATION AND FIT UP COMPONENTS</b>				
4.1	Dimensional check of fit up components, holes, overall length, hard stamp markings. (Primary members)	100%	ZS Drwgs./AISC	Insp.Rpt.# QC-S-05	I
4.2	Dimensional check of fit up components, holes, overall length, hard stamp markings. (Secondary members)	50% Min.	ZS Drwgs./AISC	Insp.Rpt.# QC-S-05	I
4.3	Butt Splice, Fit up (if any)	100%	ZS Drwgs./AISC	Insp.Rpt.# QC-S-05	H
<b>5</b>	<b>IN-PROCESS WELDING INSPECTION</b>				
5.1	Verification of actual Welding Parameters	10% Min	WPS/PQR	NCR # QC-S-14 *	V
5.2	Verification of Welders Qualification	100%	WQTR	NCR # QC-S-14 *	V
<b>6</b>	<b>NON-DESTRUCTIVE TESTING</b>				
6.1	Visual Inspection	100%	AWS D1.1	Insp.Rpt.# QC-S-07	I
6.2	Shapes/ Plates: (Primary members)				
6.2.1	Butt welds ( Flange & Web splice joints) -UT	15% Min.	AWSD1.1	UT Rpt. # S-10	T
6.2.2	Fillet welds: End plates - MT	(If required by contract)	AWSD1.1	MT Rpt. # QC-S-11	T
<b>7</b>	<b>SURFACE PREPARATON &amp; PAINTING</b>				
7.1	Receipt Inspection of Abrasives, Paints, Thinner	On every P.O	P.O/Job Spec	NCR # S-14 *	V
7.2	Surface Cleaning-Shot blasting (SA 2 ½) or Job specs	20% Min.	SSPC/Job Spec	NCR # S-14 *	I
7.3	Anchor profile	20% Min	SSPC/Job Spec	NCR # S-14 *	I
7.4	Visual inspection of Coating	50% Min	SSPC/Job Spec	NCR # QC-S-14 *	I
7.5	Paint – DFT – (Minimum Require't as specified)	20% Min	SSPC/Job Spec	Insp.Rpt.# QC-S-08	I
7.6	Marking	5% Min	ZS Drawings/Job Spec	NCR # QC-S-14 *	V
<b>8</b>	<b>GALVANIZING</b>				
8.1	Surface cleaning-SP8 (Acid picking)	5% Min	SSPC/Job Spec.	NCR # QC-S-14 *	M
8.2	In Process: (Zinc Quality, Bath composition, Bath temperature etc.).	5% Min	B6.Job Spec./ATSM A123	NCR # QC-S-14 *	V
8.3	Visual Inspection of Zinc Coating	100%	ATSM A123/Job Spec.	NCR # QC-S-14 *	I
8.4	Zinc coating thickness – (As per ASTM A123)	20% Min.	ATSM A123	Galvanizer Certificate	I
8.5	Adhesion: Hammer (or) Stout knife Test	5% Min. of each day output	ATSM A123	NCR # QC-S-14 *	M
<b>9</b>	<b>PACKAGING AND SHIPPING</b>				
9.1	Pre-Shipment Inspection-Final	100%	Job Specs.	NCR # QC-S-14 *	H
9.2	Packaging Inspection (Truck load)	100%	Job Specs.	Packing List	H/RL
<b>10</b>	<b>DOCUMENTATION</b>				
	Final Inspection Dossiers for submittal to Client upon competition of the job	All documents as per approved ITP	ZS-Standard	Final Dossiers	S

Legend: R = Review      W = Witness @ Random      NCR = Non Conformance Report      PL = Packing List  
 I = Inspection      M = Monitor      CA = Corrective Action      SRC = Shipment Release Certificate  
 H = Hold      S = Submit      ZS = Zamil Steel      IC = Inspection Certificate  
 \* = If any      V = Verify      T = Testing      RL = Release  
 A = Attend      TC = Test Certificate      MTC = Material Test Certificate

Note: 1) Inspection allotment would mean (%) percentage by number of Pcs to be Inspected  
 2) Pre-Inspection Meeting one time before commencement of the job

# special applications

Zamil Steel Vietnam specializes in fabrication and erection of structural steel works in a wide range of applications such as:

- High-rise Buildings
- Commercial Centers
- Shopping Malls
- Exhibition Halls

- Airport Terminals
- Aircraft Hangars
- Sport Stadiums



- Steel Rolling Mills
- Heavy Industrial Plants
- Power Plants

- Petrochemical Plants
- Refineries
- Oil & Gas Plants

- Built-up Girders and Columns
- Equipment Support Structures
- Military Utilities





total steel building solutions

## ZAMIL STEEL BUILDINGS VIETNAM CO., LTD

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### Hanoi Factory

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Hanoi, Vietnam

### Dong Nai Factory

Amata Industrial Park, Bien Hoa City, Dong Nai Province, Vietnam

### Representative Offices

Vietnam • Thailand • Singapore

Philippines • Myanmar • Malaysia

Laos • Indonesia • Cambodia • Bangladesh

### Other Factories

Saudi Arabia • Egypt • India • United Arab Emirates



[www.zamilsteel.com.vn](http://www.zamilsteel.com.vn)

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