PANEL FABRICATION PROCESS

PANEL FABRICATION MACHINE SPECIFICATIONS- FEATURES AND USAGE

Features:

Fabrication machine has the advantage of having a beautiful appearance, design, reliable quality, easy operating process for fabrication, less occupying space, saving energy, adequate safety process and so on. It is very practical and economical. The whole equipment while fabricating involves the technical process with basic material of colour coated steel coil. The surface of the roller is characterized by being heat- treated, high tensile strength and hardness and is very smooth which increases the using life of the rollers and also can avoid the coil being scratched.

Automatic computer is in-built for controlling frequency variable and is provided with hydraulic mould cutter for cutting during the fabrication process. The coil is supplied by the de-coiler and goes into the main machine for “roll forming” by the guide devices. It uses rotating encoder for measuring the impulse signal return

to the computer board to control the main machine. When the panel is being formed and apart from the fixed specifications the hydraulic motor slowly reduces the speed. When the output panels reaches the fixed length, the main machine is stopped and the hydraulic working cylinders act and cut off the panel and then it returns back and drives the blade back.

Usage:

The product of this machine can be used widely in architecture, industrial, defence, agriculture, animal sciences and cattle farming etc for fabricating temporary roofing sheds.

KEY COMPONENTS OF FABRICATION MACHINE

Fabrication Machine has the following key components that form the part of fabrication process:

- Roll Forming machine
- Cutting Machine
- Curving Machine
- Seaming Machine at ground level
- Seaming Machine at roof level
- Hammering Machine
- Ancillaries as Crane/ Hydra/ Generator/ Drilling Machine/ Fork Lift
- Painting and Spray Machine

All the above are transported and carried in truck/ tractor-trolley at the fabrication site

PANEL FABRICATION PROCESS

The fabrication process comprises up of the following stages as a part of "PANEL FABRICATION PROCESS":

1. SHEET FABRICATION MACHINE
2. COIL LOADING AND FEEDING
3. COIL INSERTION INTO THE MACHINE ROLLERS
4. SHEET ROLL FORMING AND FABRICATION
5. SHEET CUTTING
6. SHEET INSERTING FOR CURVING
7. CURVING OF PANEL TO FORM CURVED PANEL
8. GROUND SEAMING OF PANEL
9. ELECTRIC HANGER FIXING
10. SEAMED PANEL THAT IS READY TO LIFT UP
11. LIFTING UP THE PANEL
12. ROOF SEAMING AND ROOF LEVEL
13. DRILL ON GUTTER BEAM AND ANCHORING
14. AFTER ANCHORING CEMENT PLASTER IS USED FOR BINDING

INSTALLATION PROCESS

- Pre Painted Steel Coil is set in the roll forming machine with the help of Fork Lift. The coil is set vertically with one end in roll forming machine. Rolling machine has 21 rolling stations for proper corrugation with the length of approx 60 feet.

- Cutting machine is used for cutting the panels before the curving process

- Curving machine is used for giving specific curve depending upon the span. In this process after corrugating the sheet (panel) is fed into the curving machine which gives required curve and strength to the panel. Thus, strengthening the sheet

- 3 panels are joined by the seaming machine at ground level which is called as 1 set.

- Crane is used to pick up set for further installation

- Drilling Machine is used for drilling anchor fasteners which is used in installation of fabricated panels with RCC/ Steel Gutter.

- Seaming machine at roof level is used for seaming of the two sets of panels

- Fabricated panels have male and female edges which are used in the seaming process

- Generator is used for electric supply to machine systems (Three phase 20 HP)

All above processes are involved in the installations process of the fabricated panels.

SHEET SPECIFICATIONS

Sheet that is used for fabrication has the following two types of specifications:

MATERIAL SPECIFICATIONS:

1. Galvanized Steel Sheet (PPGI)
2. Galvalume Steel Sheet (PPGL)

1. GALVANISED IRON STEEL SHEET

SPECIFICATION FOR COLOUR COATED PPGI COILS TECHNICAL FEATURE UNIT	
Galvanized	Color Coating :14246
Zinc Coating	120 GSM as per IS277
Yield Strength(MPA)	350 MPA max
Tensile Strength	450 MPA max
Elongation	20%(min)
Thickness Tolerance(mm) TCT	1 mm+ 0.02mm
Width (mm)	914mm
Width Tolerance	1 MM (+ -)
Hardness	65-75 hrb
Organic Coating	RMP
Primer	PU-Primer
Top-color	RAL9002,RAL5012
Back Color	Std. Epoxy Grey
Top Primer Dft	5-7 Microns
Top Coat Dft	18 + microns
Back Coat Dft	5-7 Microns
Gloss Tolerance (%) G.U.	30 + 10
Bend Test	2T min
Salt Spray Test	750 Hrs
Humidity Test	1000 hrs

QUV test	1000 hrs
Pencil Hardness Test	Min H for Top & Back Coat
Cupping Test	7 mm Max for soft Grade
Cross Hatch	100/100
Solvent Rubbing Test	Minimum 50 Double rubs T/B
Colour Difference	Delta E =1.0 Max or visual Match
Impact Test	Min 30 inch-pound(Ball Dia=12.5mm)
Flatness	3mm wave Max. with 2 Wave/mtr
	2mm Center buckling
Surface Protection (G/F)	No
End Use	K-Span
Coil Inner Dia	508 mm
Winding	Flat :Top Color Outside
Visual Defects	Free From defects like Blister, Roll damage mark, Edge Damage, Uncoated, Under curing, Major Saw Edge

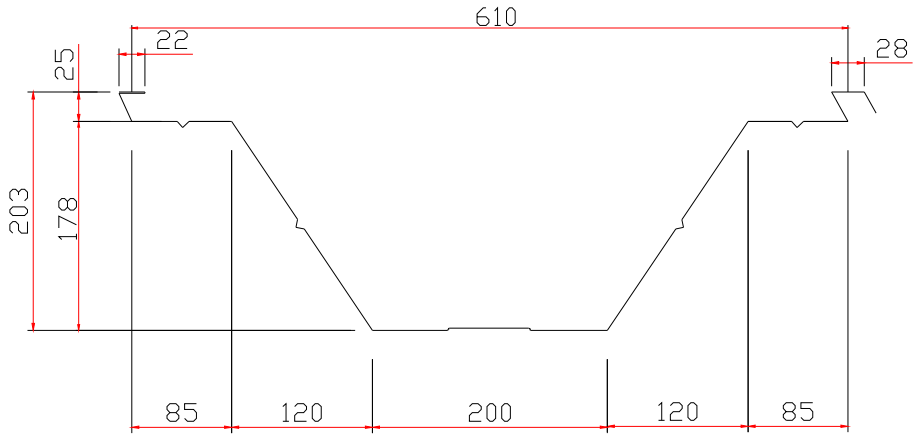
2.GALVALUME STEEL SHEET

PARAMETERS	TECHNICAL SPECIFICATIONS
Reference Standard	ASTMA 792
Chemical Composition (Base Metal)	Low Carbon Steel- %C: 0.12 max, %Mn : 1.2 max, %S : 0.03 max, %P : 0.03 max.
Sheet Thickness	BMT : 1.00mm; TCT : 1.09mm
Tolerence	0/+ 0.02mm
Sheet Width	914mm
Tolerence	0/+ 0.02mm
Chemical Composition (Coating)	55% Al-Zn alloy coating, 1.6% Si, 43.40% Zinc
Al-Zn Coating	150 gsm
Steel Grade	D
Yield Strength	350 MPA
Tensile Strength	350 MPA
Paint System	Regular Modified Polyester (Suitable for Roll Forming)
Top Coat Thickness	23-25 microns
Back Coat Thickness	10-12 microns
Reference Standard	IS 14246 CLASS 3
Chemical Composition (Base Metal)	Low Carbon Steel- %C, %Mn, %S, %P, %Si as per Standard
Sheet Thickness	BMT : 1.0mm; TCT : 1.05mm
Tolerence	0/+ 0.02mm

Sheet Width	914mm
Tolerence	0/+ 0.02mm
Chemical Composition (Coating)	Zinc + Silicone
Zn Coating	120 gsm
Steel Grade	D
Yield Strength	350 MPA
Tensile Strength	350 MPA
Paint System	Regular Modified Polyester (Suitable for Roll Forming)
Top Coat Thickness	25 microns
Back Coat Thickness	7 microns

SHEET PROFILE DETAILS

1. Coil Width:- 914mm
2. Thickness of sheet:- 0.85 mm to 1.5mm
3. Panel width after corrugation:- 610 mm (sheet profile diagram is as given below)



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