



JUNGWOO EMC
Middle East FZC



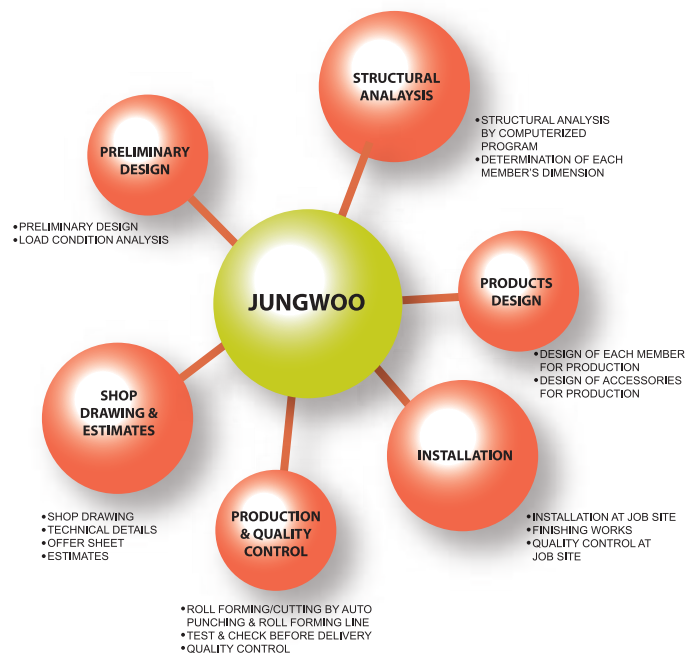
QEB SYSTEM

Quick Pre-Engineered Building System

INNOVATIVE AND HIGH - TECH
PRE-ENGINEERED LIGHT-WEIGHT **GALVANIZED** STEEL STRUCTURE

15 Days

from order placement to
completion for 600 sqm



KOREAN TECHNOLOGY AT ITS BEST



ISO 9001 Certified Company

JUNGWOO QUICK PRE-ENGINEERED BUILDING SYSTEM

THE MOST EFFECTIVE AND ECONOMICAL STEEL STRUCTURE SYSTEM



Total Pre - Engineering & Designing Service



The most Effective and Economical price



Innovative Reduction of Construction Period



Strong structure and Modern appearance



Perfect Quality Control



Superior Durability



*Familiar with your Environment and
Convenient Re-installation*

ZERO PERCENT OF LOSS AND WASTE MEANS PERFECT INSTALLATION.



ISO 9001 Certified Company

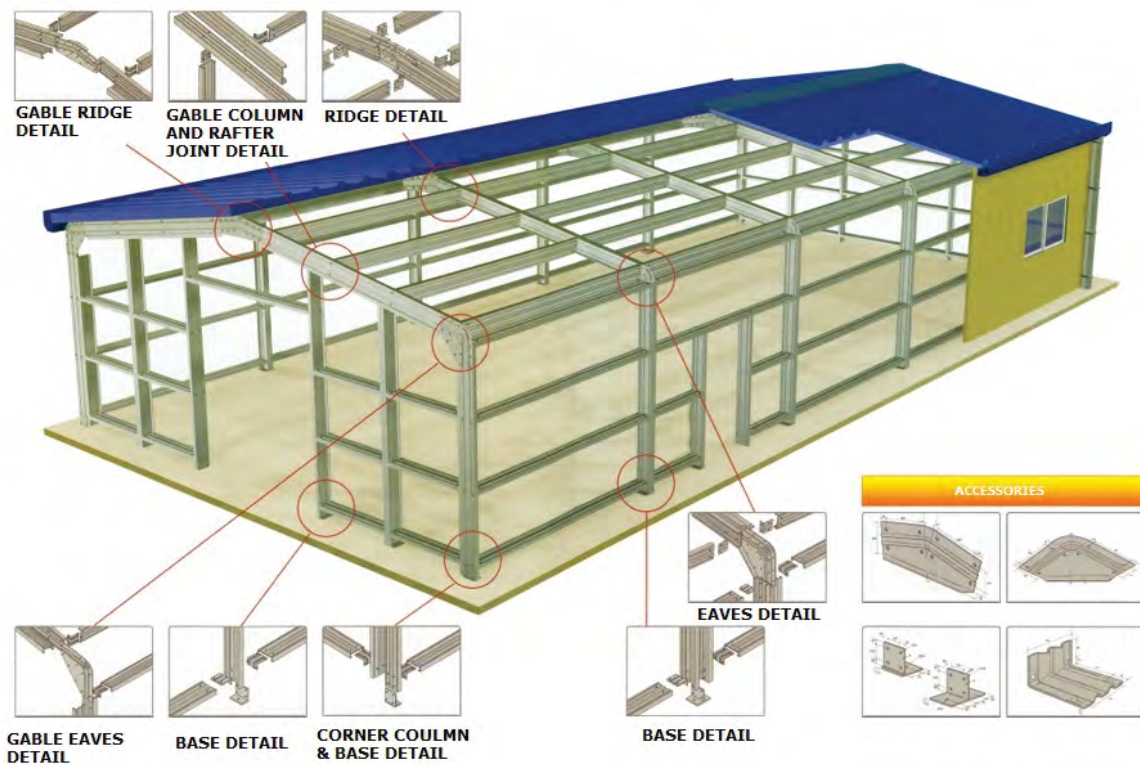
JUNGWOO QUICK PRE-ENGINEERED BUILDING SYSTEM

KOREAN DEVELOPED TECHNOLOGY BUT MADE IN UAE

Most Efficient, Economical and Easy Building System

QEB or Quick Pre-engineered Building System is an innovative building method. This multi-purpose building system has various applications from warehouses to green houses. Jungwoo QEB system is a system where pre-engineered column members are produced through our own fully automated roll forming machines with hot dip galvanized iron.

Our computerized structural analysis and calculation program takes into account loading, weather and structural conditions to provide an accurate design and economical estimate.



Applications

From warehousing to animal farms, the versatile Jungwoo QEB system can be used for several purposes. The main features of our GI steel structure like fast design, economical estimation, easy assembly and disassembly lend itself to applications which you can imagine.



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JUNGWOO QUICK PRE-ENGINEERED BUILDING SYSTEM



Multiple Elevation



Poultry House



Cattle House/Animal Farm



Factory/Storage



Green House with Transparent Cladding



Octagonal Structure



QEB with Concrete Block Walls



QEB and H-beam Combination



ISO 9001 Certified Company

JUNGWOO QUICK PRE-ENGINEERED BUILDING SYSTEM



Interconnected QEB



QEB with One Side Slope



QEB Parapet Style



QEB Other Facilities



Military Camp



Warehouses

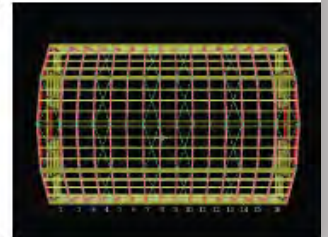
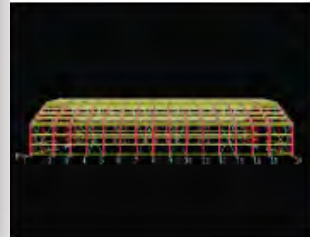
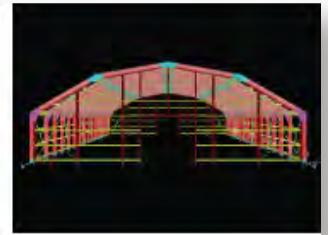
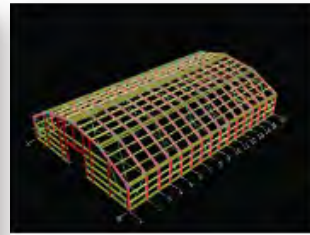
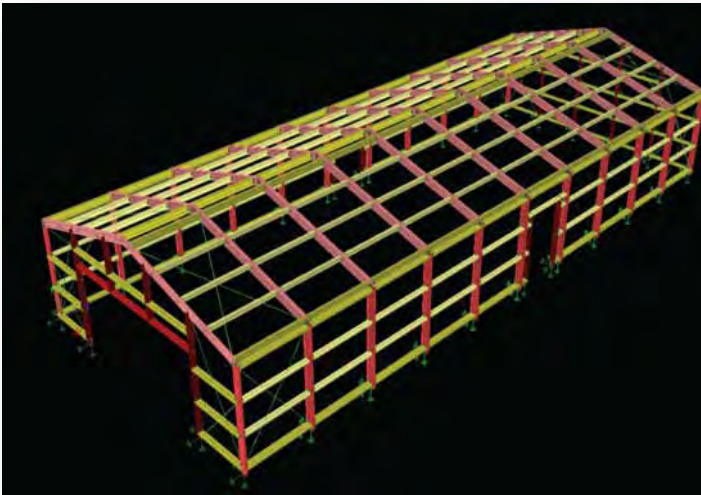
QEB with Sandwich Panels



ISO 9001 Certified Company

JUNGWOO QUICK PRE-ENGINEERED BUILDING SYSTEM

Software Generated Design:



Production Line



Packaging for Transport



ISO 9001 Certified Company

JUNGWOO QUICK PRE-ENGINEERED BUILDING SYSTEM

MAIN MEMBERS

A STANDARDS		220X65X18X10				300X65X18X10			
SINGLE TYPE SHAPE									
THICKNESS (mm)		1.5	2.0	2.5	3.0	1.5	2.0	2.5	3.0
WEIGHT (kg)		4.89	6.11	7.02	9.16	5.9	7.36	8.47	11.05
SECTION AREA (mm ²)		665.7	826.9	946.5	1221.0	793.7	966.9	130.5	1461.0
CENTER AXIS	X(mm)	109.2	109.0	108.8	108.5	149.2	149.0	148.8	148.5
	Y(mm)	18.6	18.4	18.3	17.9	15.6	15.4	15.3	14.9
INERTIA MOMENT	I _{xx} (cm ⁴)	455.1	562.1	645.8	817.9	932.7	1152.9	1314.8	1681.3
	I _{yy} (cm ⁴)	36.2	44.1	49.8	62.1	40.4	49.2	55.5	69.2
SECTION MODULOUS	Z _{xx} (cm ³)	41.6	51.5	58.8	75.3	62.5	77.3	88.3	113.2
	Z _{yyMAX} (cm ³)	19.4	23.9	27.2	34.6	25.7	31.8	36.2	46.2
	Z _{yyMIN} (cm ³)	8.1	9.9	11.2	14.0	8.4	10.3	11.7	14.2
RADIUS OF BYRATION	R _{xx} (mm)	82.6	82.4	82.2	81.8	108.4	108.0	107.8	107.2
	R _{yy} (mm)	23.3	23.1	22.9	23.5	22.5	22.3	22.1	21.7

*CORNER COLUMN, GABLE COLUMN, PURLIN, GIRT use single type accessories.

A STANDARDS		220X65X18X10				300X65X18X10			
DOUBLE TYPE SHAPE									
THICKNESS (mm)		1.5	2.0	2.5	3.0	1.5	2.0	2.5	3.0
WEIGHT (kg)		9.77	12.22	14.05	18.32	11.78	14.73	16.94	22.09
SECTION AREA (mm ²)		1331.4	1653.9	1893.7	2442.1	1587.4	1973.9	2261.1	2922.1
CENTER AXIS	X(mm)	109.2	109.0	108.8	108.5	149.2	149.0	148.8	148.5
	Y(mm)	0	0	0	0	0	0	0	0
INERTIA MOMENT	I _{xx} (cm ⁴)	910.2	1124.2	1281.1	1635.9	1865.4	2305.9	2629.6	3362.7
	I _{yy} (cm ⁴)	121.1	147.4	166.1	206.4	121.1	147.4	166.1	206.4
	Z _{xx} (cm ³)	83.3	103.1	117.7	150.7	125.0	154.7	176.6	226.4
SECTION MODULOUS	Z _{yyMAX} (cm ³)	19.1	23.4	26.4	33.3	19.1	23.4	26.4	33.3
	Z _{yyMIN} (cm ³)	19.1	23.4	26.4	33.3	19.1	23.4	26.4	33.3
RADIUS OF BYRATION	R _{xx} (mm)	82.6	82.4	82.2	81.8	108.4	108.0	107.8	107.2
	R _{yy} (mm)	30.1	29.8	29.6	29.0	27.6	27.3	27.1	26.3

* MAIN COLUMN and RAFTER use double type accessories.

DESCRIPTION OF ACCESSORIES

Each bracket and angle has different shape and dimension according to WEB series LB 220, LB 300 and angle(5°, 10°, 15°)

FRAME FIXING BOLT



Frame fixing bolts are used for fixing of all members and accessories. This item consists of M16x40 hexagonal headset bolt, nut and two washers.

ANCHOR BOLT



Anchor bolts are used to fix columns to the foundation. This Hilti HSA 16x145mm anchor bolt is suitable for fixing into concrete with minimum strength of 25M/m².

RIDGE BRACKET



Ridge brackets are generally used in pairs for rafter-to-rafter connections at the ridge. Three types are available to match to three roof slopes. (5°, 10°, 15°)

EAVES BRACKET



Eaves brackets are generally used in pairs to connect column with rafter. The brackets are to be located between form column and rafter. For efficient connection. Eaves bracket has a pressed rafter shape which allows a profile to give the required roof slopes 5°, 10°, 15°. Due to give leads on the brackets, it prevents them from buckling under load and slip between member (column and rafter) and bracket.

BASE PLATE



T-shaped base plate is to be located at intermediate position of two columns. The web is to be fastened by bolts between each column. L-shaped base plate is for corner columns. gable posts and door posts where single columns are generally used for uprights.

FIXING CLEAT



Fixing cleats bent by 5°, 10°, 15° are used for making connections between gable post head and bable rafter trimmer.



STRUCTURAL RESISTANCE EXPERIMENT



△POSCO (RESEARCH INSTITUTE OF INDUSTRIAL SCIENCE & TECHNOLOGY)

[Ministry of Construction & Transportation Notice No.1988-623]

Agricultural Machinery Store Warehouse Standard drawing and specification approval, notice.

[Ministry of Construction & Transportation Notice No.2000-32.3]

Variable Type Warehouse (Military Basement and warehouse) Standard drawing and specification approval, notice.

Structural review and checklist for drawing

Amount of snow cover for each area in Korea

Section	Area	Amount(cm)
I	South Coast Area	30
II	National Capital Region	50
III	Goonsan, Daegu, etc.	70
IV	Sokcho, Daekwaonyung	150
V	Ulreung - Do	350

Basic wind speed for each area in Korea

Grade		Area	Drawing Basic Wind Speed	Ground Roughness
I	Inland	National Capital Region, Kwangju, Cheongju, Daejeon	35	B
II	Coast (1)	Incheon, Ulsan, Goonsan	40	C
III	Coast (2)	Sokcho, Daekwaonyung	45	C
IV	Island	Ulreung - Do	50	C

Dead load

- Steel main-material of structure and self-weight
- Self-weight of roof material

Live load

- Self-weight of fixtures inside facilities which directly forced to building framework
- Self-weight of installing facilities on the roof and ceiling

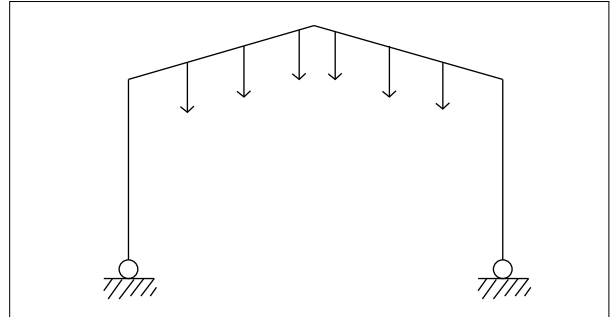


Result of Structure interpretation

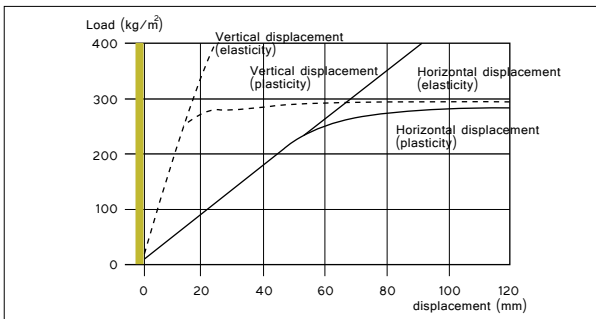
The interpretation model shows the same sized experiment object by two dimensions coordinate, and supporting point shows all by Hinge.

The ridge and eave of experiment object is supposed Fully Rigid and load is modelling by testing same location as pre-load situation of experiment object which is same situation of experiment.

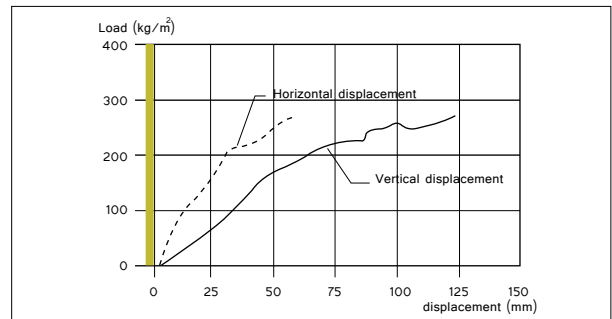
Modelling of pre-load experimental object



Interpretation result of experimental object



Displacement diagram of experimental object



Experiment result of experimental Structure

Pre-load weight for experimental object is pre-loading to line-load at the purlin location connecting pre-load equipment.

Detail points are as below pictures.

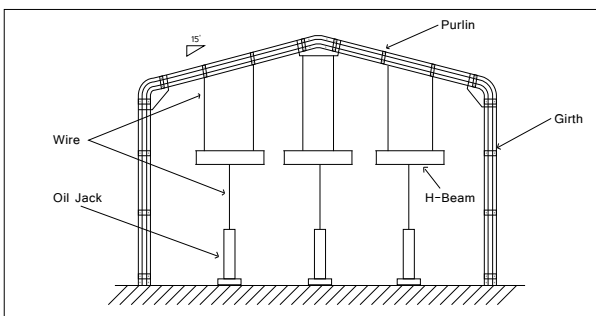
Vertical load is, at the purlin location of frame, measured displacement of framework by installing displacement meter as picture to pre-load forcing to line load of 6 points each frame, total 12 points.

Each experimental object is considered all comparatively stable move, and load and displacement is increasing linearly then shows little bit changing of slope after constant load.

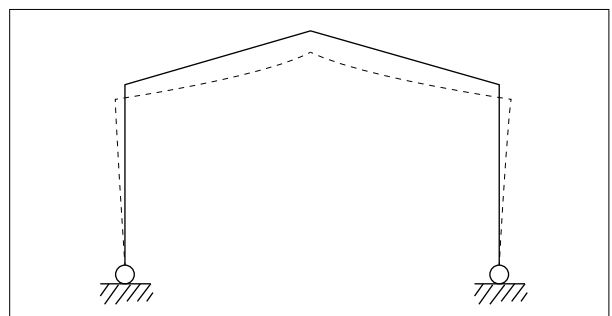
Comparison of between experimental data as following vertical pre-load and actual vertical load is compared from experiment for situation that Dead Load and Snow Load effect at the same time which load combination is the most in adverse condition describes in the Structural Calculation.

Each used load is used load data according to described in the Structural Calculations.

Interpretation result of experimental object



Displacement diagram of experimental object





ISO 9001 Certified Company

JUNGWOO QUICK PRE-ENGINEERED BUILDING SYSTEM

JUNGWOO Q.E.B SYSTEM WILL MAKE YOUR OWN IDEA REALIZED

JUNGWOO

COMPARISON WITH GENERAL STEEL STRUCTURE SYSTEM

CLASSIFICATION	GENERAL STEEL STRUCTURE SYSTEM	JUNGWOO Q.E.B SYSTEM
CONSTRUCTION PERIOD	Needs long period to manufacture and install in the construction field.	Needs short period to install pre-engineered construction materials.
QUALITY	Unstable quality, not precise size and small amount of products produced by manual or by old machines.	Uniform, high quality and large quantity of products produced by fully automated and optimized roll forming machine.
INSTALLATION	Complicated installation process requires high skilled workers and welders.	Pre-calculated and pre-engineered materials do not require skillfull workers to install.
INSTALLATION EQUIPMENT	Heavy construction equipments are required and it restrict the range of application.	Applicable to every construction field without heavy construction equipments.
DISMANTLEMENT	Difficult to dismantle and remove.	Quick and easy to dismantle and re-install.
FINISHING	Requires many finishing process like painting to the welded part and touch-up.	By using HGI steel and bolts installation method, no finishing process is required.

JUNGWOO EMC MIDDLE EAST FZC.

PO Box: 42323, Hamriyah Free Zone , Sharjah, United Arab Emirates

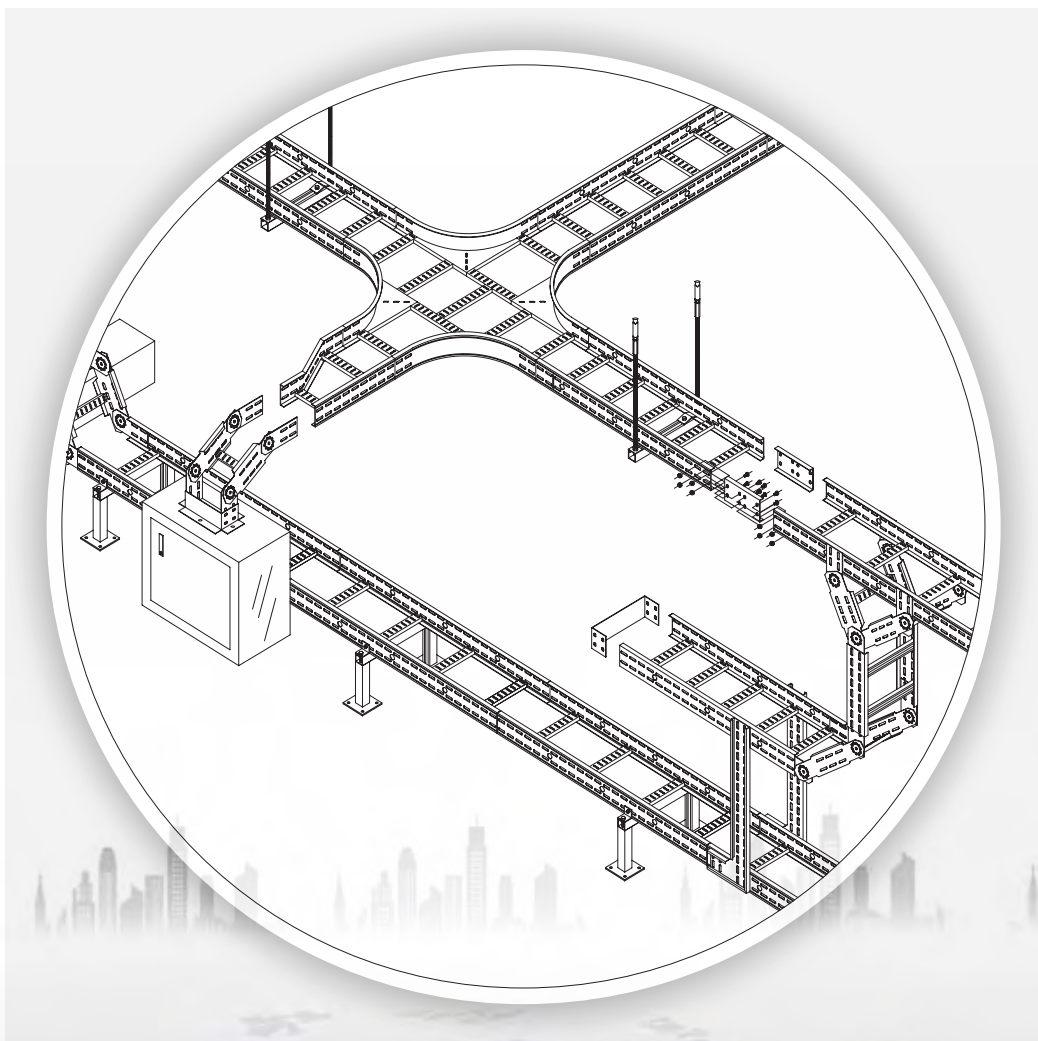
Tel: +971 6 526 4522 , Fax: +971 6 526 4523

Email: sales@jungwooemc.com



JUNGWOO EMC
MIDDLE EAST FZC

Cable Management System



**Complete Cable
Support Solutions**

Our vision:

We aspire to be the global leader in the steel industry by being the most reliable and innovative value added steel manufacturing, services & solution provider.

Our Mission:

To maximize value for our client base globally, we commit ourselves to supply high quality steel products, services and solutions. Utilizing innovative technologies and solutions and making it possible through a team of well experienced professionals. Our focus is continuous improvement in product quality and client satisfaction.

Our Company Policy:

The company management maintains a Korean style of management where ideas pass on from shop floor level right up to the top management's desk. We make sure that right thing is at the right place at the right time. This helps us to manufacture our products with high precision, meeting all the specifications. We have the capability to deliver and meet urgent needs of our customers and have built their confidence by providing high quality products on time using our automated machines. Through our subsidiary in UAE, we target to reach larger client base across the MENA region. We believe in continuous improvement and follow the business principle focused towards customer satisfaction by providing quality products and solutions and on time delivery. Our prime focus is to serve our customers better.

Preface:

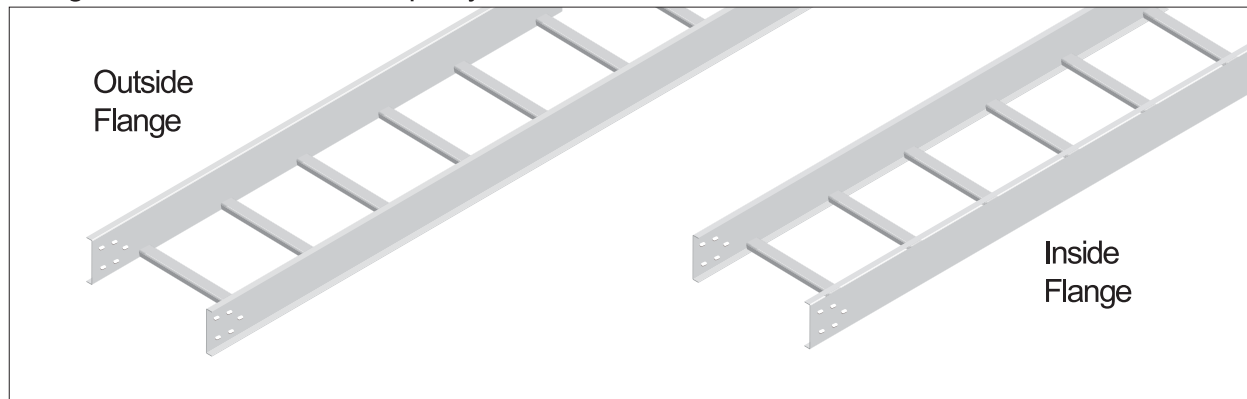
Jungwoo EMC Middle East FZC offers a comprehensive range of a complete cable management system. The system offered comprises;

- Jungwoo Cable Ladder as per BSEN 61537:2002
- Jungwoo Cable Tray as per BSEN 61537:2002
- Jungwoo Cable Trunking as per BSEN 10327:2004
- Jungwoo Metal Framing Channel as per BSEN 6946:1988



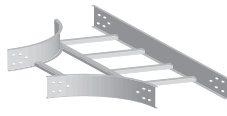
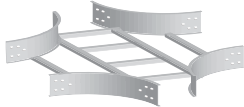
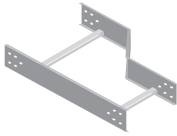
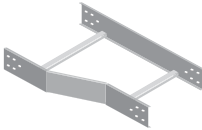


Jungwoo Cable Management systems full range of products is ISO 9001:2008 Certified. We have a fully equipped factory with the design, production and quality control departments. The load capabilities, support span requirements, deflection criteria, site installation problems have been carefully considered by our design department while designing the entire product range. All our products are manufactured using the latest technology which helps us to maintain a unique quality product throughout the manufacturing process. Entire Jungwoo cable management system has been design to minimize welding. Last 25 yrs of research and development in this field has helped us to develop a system which has taken into account all the requirements of construction sites especially in Asia and the MENA region.

CABLE LADDER






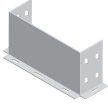



JUNGWOO Cable Ladders are manufactured in accordance to BSEN 61537:2002 using our state of the art manufacturing facility. We offer a wide range of Cable Ladder as per your site conditions.



CABLE LADDER FITTINGS

			
90deg Flat Bend	45deg Flat Bend	Horizontal Tee	Horizontal Cross
			
RH Reducer	LH Reducer	Outside Riser	Inside Riser

CONNECTORS & ACCESSORIES

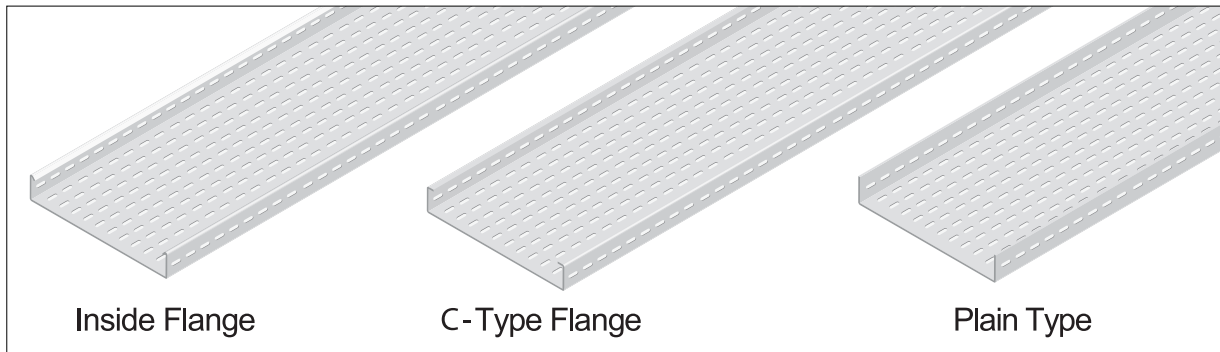
				
Std. Connector	Exp. Connector	Vert. Connector	End Plate	
				Earthing Jumper
Box Connector	Angle Connector	Hold Down Clamp	Expansion Guide	

Ordering information

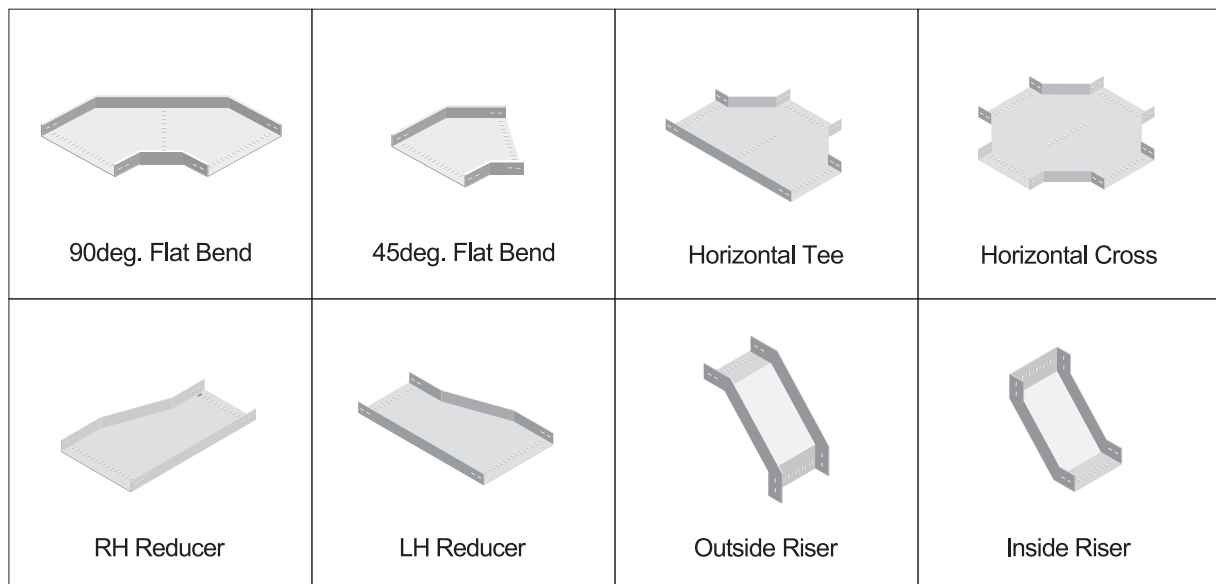
Width (mm)	Ladder Type	Height (mm)	Length (M)	Material Finish	Thickness
100	JL - Straight	60	2.44	H - HDGAF	1.2
150	JL9H - 90deg Horizontal Bend	100	3.00	A - Aluminum	1.5
200	JL4H - 45deg Horizontal Bend	125	3.60	S - Stainless Steel	2.0
300	JLTH - Horizontal Tee	150	6.00		2.5
450	JLXH - Horizontal Cross				
600	JL9RI - 90deg. Inside Riser		Radius		
750	JL9RO - 90deg. Outside Riser		300		
900	JLRH - Right Hand Reducer		600		
	JLLH - Left Hand Reducer		900		

CABLE TRAY

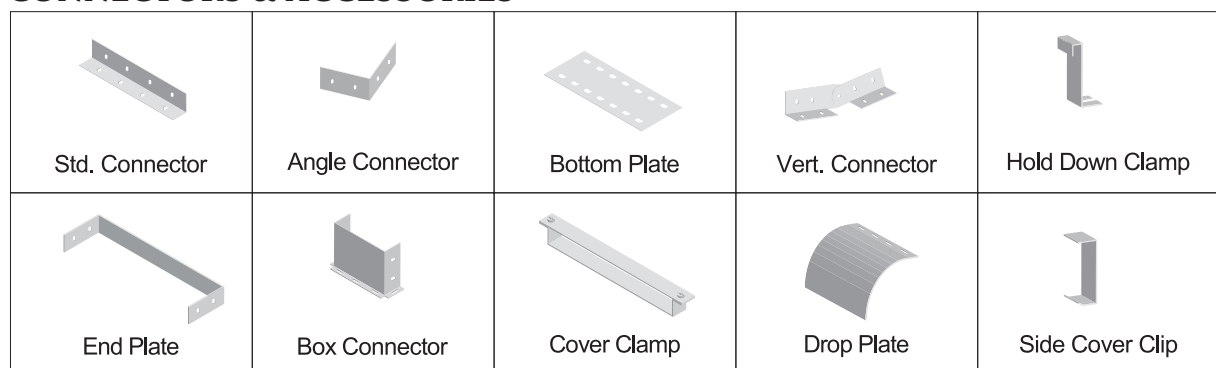
JUNGWOO Perforated Cable Trays are manufactured in accordance to BSEN 61537:2002 using our automated machines. We offer a wide range of Perforated Cable Trays and accessories as per our standard design and we can also manufacture as per your project requirements.



CABLE TRAY FITTINGS



CONNECTORS & ACCESSORIES

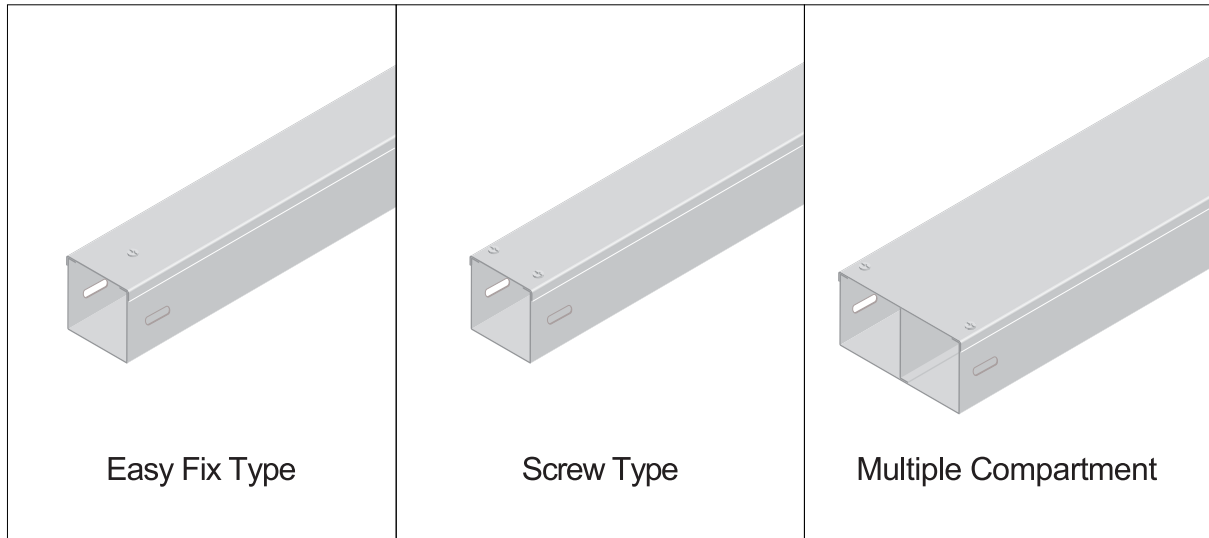


Ordering information

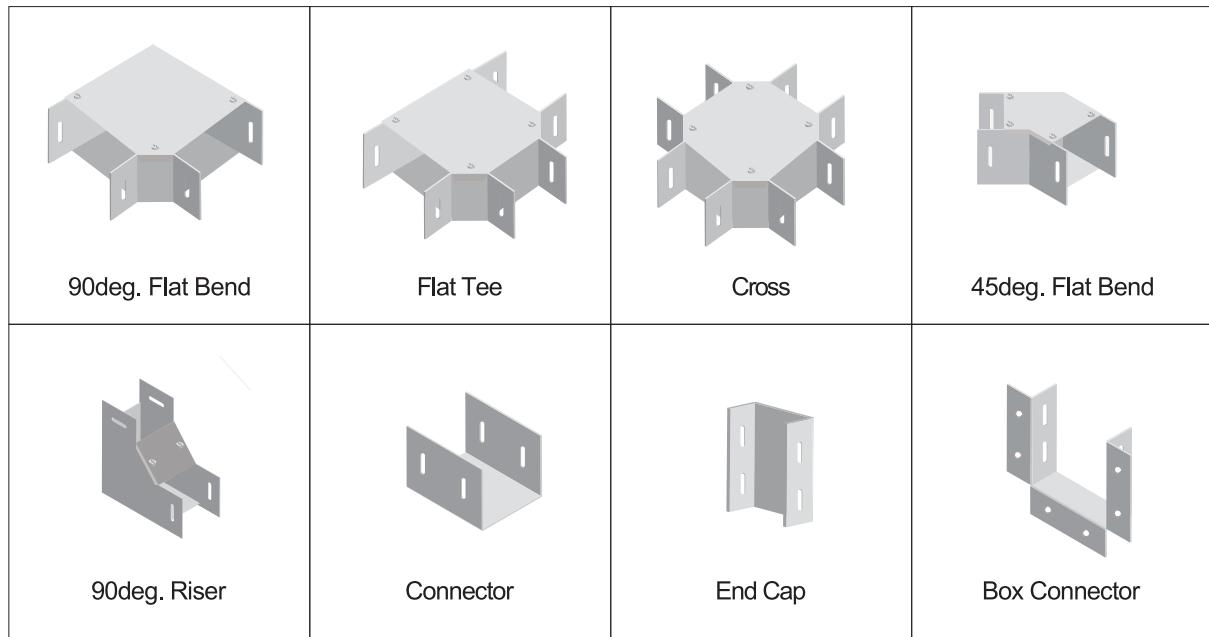
Width (mm)	Tray Type	Height (mm)	Length (M)	Material Finish	Thickness
100	JT - Straight	50	2.44	G - Galvanized Iron	1.0
150	JT9H - 90deg Horizontal Bend	75	3.00	H - HDGAF	1.2
200	JT4H - 45deg Horizontal Bend	100		A - Aluminum	1.5
300	JTTH - Horizontal Tee	125		S - Stainless Steel	2.0
450	JTXH - Horizontal Cross				2.5
600	JT9RI - 90deg. Inside Riser				
750	JT9RO - 90deg. Outside Riser				
900	JTRH - Right Hand Reducer				
	JTLH - Left Hand Reducer				

CABLE TRUNKING

JUNGWOO Cable Trunkings are manufactured in accordance to BSEN 10327:2004. We offer a wide range of Cable Trunking as per your desired width, height and number of compartments.



FITTINGS & ACCESSORIES

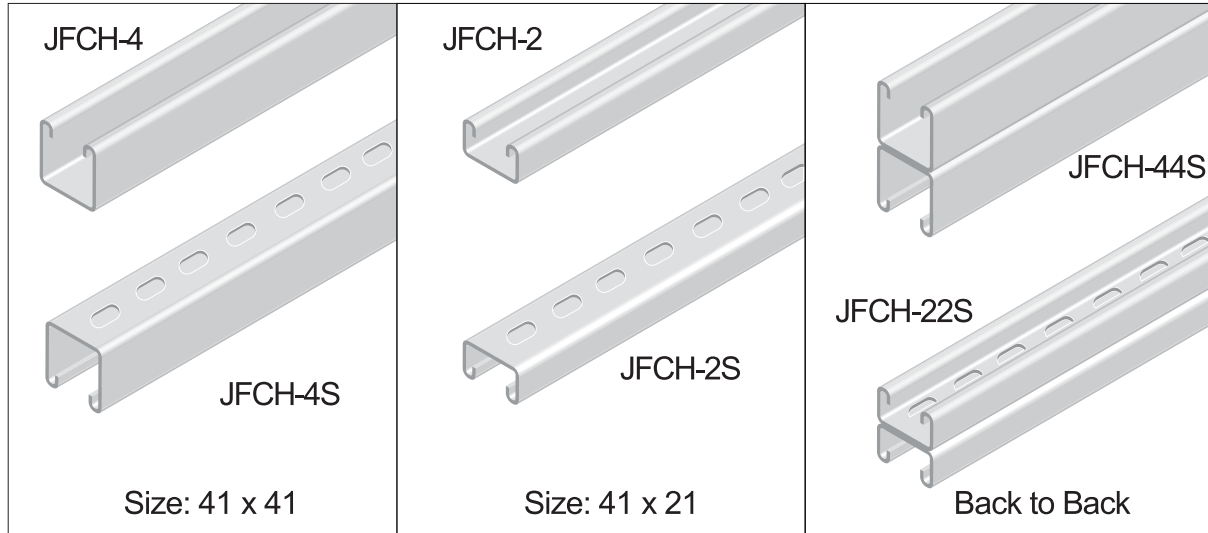


Ordering information

Width (mm)	Tray Type	Height (mm)	Length (M)	Material Finish	Thickness	Compartments	Cover Type
100	TR- Straight	50	2.44	G - Galvanized Iron	1.0	1	EF - Easy Fix
150	TR9H - 90deg Horizontal Bend	75	3.00	H - HDGAF	1.2	2	SF - Screw Fix
200	TR4H - 45deg Horizontal Bend	100		A - Aluminum	1.5	3	
300	TRTH - Horizontal Tee	125		S - Stainless Steel	2.0		
	TRXH - Horizontal Cross	150					
	TR9R - 90deg. Inside Riser						
	TR9R - 90deg. Outside Riser						
	TRRH - Right Hand Reducer						
	TRLH - Left Hand Reducer						

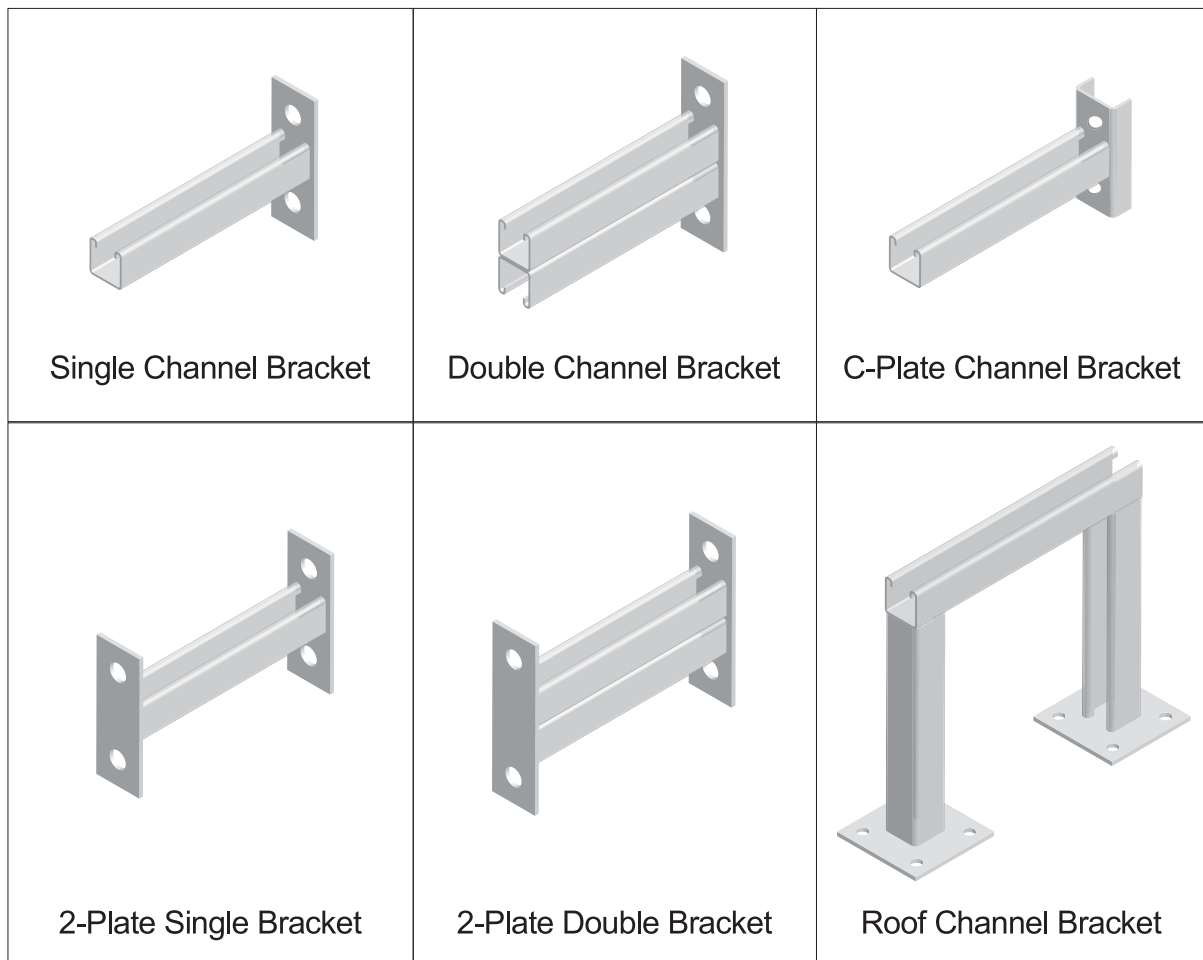
CHANNEL & SUPPORT SYSTEMS

JUNGWOO Metal Framing Strut Channels are manufactured in accordance to BS 6946:1988. We strictly follow our clients' specifications to ensure the Channels & Supports provided can withstand the load installed. Jungwoo provides technical assistance to our client to ensure the correct materials are used at the site.



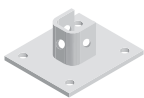
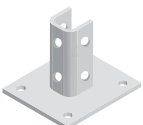
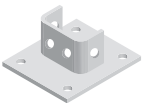
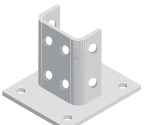




Channels are available in 41x41 & 41x21, Plain Type & Slotted, with material of G.I., HDGAF & SS, lengths up to 6mtrs and thickness from 1.5mm up to 2.5mm

BRACKETS















POST BASES

Jungwoo Post Base are made of 6mm Hot Rolled Material and Hot Dipped Galvanized according to BS Standards.

			
Single Channel Low Post Base	Single Channel High Post Base	Double Channel Low Post Base	Double Channel High Post Base
			
Single Channel Low 2 Hole Post Base	Single Channel High 2 Hole Post Base	Double Channel Low 2 Hole Post Base	Double Channel High 2 Hole Post Base

FITTINGS

A comprehensive range of fittings are available which are made simple and easy to install and helps you minimize fabrication at the site.

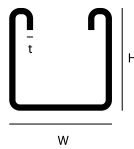
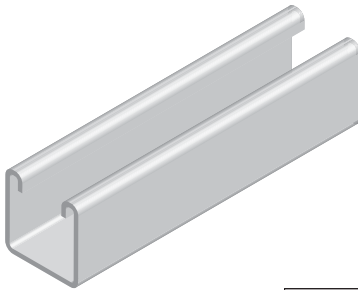
			
Square Washer	2-Hole Flat Plate	3-Hole Flat Plate	4-Hole Flat Plate
			
3-Hole L- Plate	4-Hole L- Plate	3-Hole Tee Plate	Cross Plate
			
2-Hole Angle Fitting	3-Hole Angle Fitting	4-Hole Angle Fitting	4-Hole Triangle

JUNGWOO CHANNEL PROFILES

The channel profiles are designed to provide an effective yet economical solution to the support of a wide variety of items throughout the various industry sectors.

[U-Channel Non-Slotted]

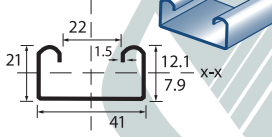
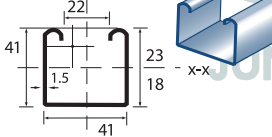
Material : Hot-rolled mild steel
Finish : Hot Dip Galvanized(HDG)
Length : 3,000mm, Max.6,000mm
Options : Galvanized iron



Unit : mm

Catalog No.	L	W	H	t
JFCH-4	3000	41	41	1.5~2.5

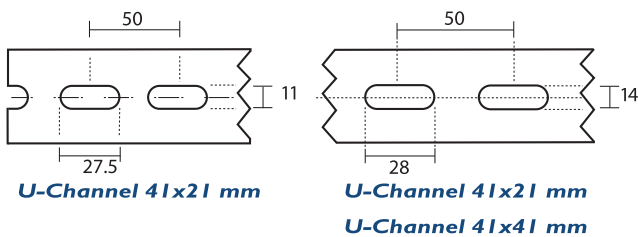
Uniform Load Capacity

Profile	Le (m)	Safe working loads in kg Uniform		Def. Limit 1/200 of Span - kg	Def. Limit 1/360 of Span - kg	Safe column loads at centroid - kg
		Load (kg)	Def. (mm)			
41X21 mm 	0.50	201	2.6	195	108	2039
	0.75	134	5.5	91	51	1162
	1.00	100	9.6	52	29	681
	1.25	80	15.1	33	18	443
	1.50	67	22.4	22	12	310
	2.00	50	41.1	12	7	
	2.50	40	68.2	7	4	
	3.00	33	105.6	5	3	
						Le/rxx > 180
41X41 mm 	0.50	656	2.1	-	427	3453
	0.75	437	3.1	-	295	3311
	1.00	328	5.0	328	182	3001
	1.25	262	7.5	218	121	2400
	1.50	219	10.9	150	83	1797
	2.00	164	19.9	83	46	1060
	2.50	131	31.8	52	29	690
	3.00	109	47.6	34	19	484

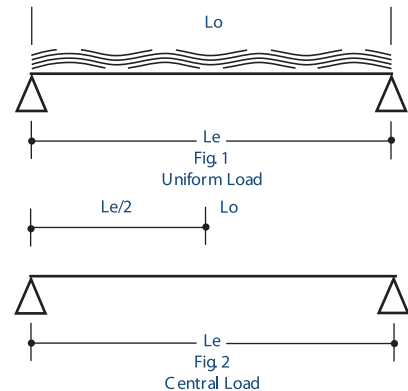
Jungwoo Metal Framing Channel as per BSEN 6946:1988

Channel Profiles are also available in Stainless & Aluminium to order.
Other special gauges can be produced to customer requirements,
Channel fittings - refer to Sales Office.

Slot Details



Loading Arrangements



JUNGWOO EMC MIDDLE EAST FZC

Hamriyah Free Zone, Phase II, PO Box: 42323, Sharjah, U.A.E.

Tel: +971 6 526 4522, Mob: +971 55 288 1470

Email: sales@jungwooemc.com

