

Diamond Walraven “Modern Fixing Systems”



Fixing Systems

Pipe Clamps & Support Channels





- Fixing:
 - mechanical installations
 - electrical installations
- Including heating systems, sanitary installations, sprinkler pipes, air ducts, cooling pipes, cable trunking, etc.
- Products:
 - Pipe Clamps (with and without lining)
 - Sprinkler Clamps
 - Rail (Channel) fixing system



Pipe Clamps for Plumbing



Lined Split Clamp



Lined Sprinkler Clamp



Lined Clevis Hanger



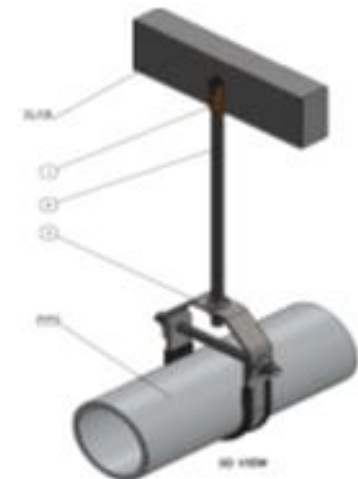
Lined U Strap



Heavy Duty Clamp



Lined U Bolt





Fire Fighting Supports



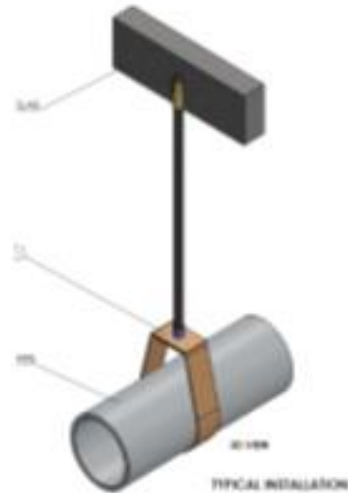
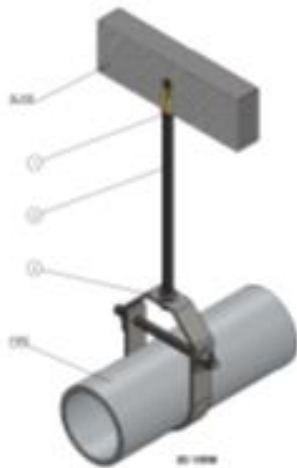
Sprinkler Clamp



Clevis Hanger



Girder Clamp





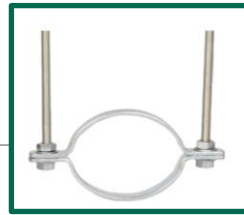
Chilled Water Pipes Supports



Plain Split Clamp



U Strap



Two Bolt Clamp



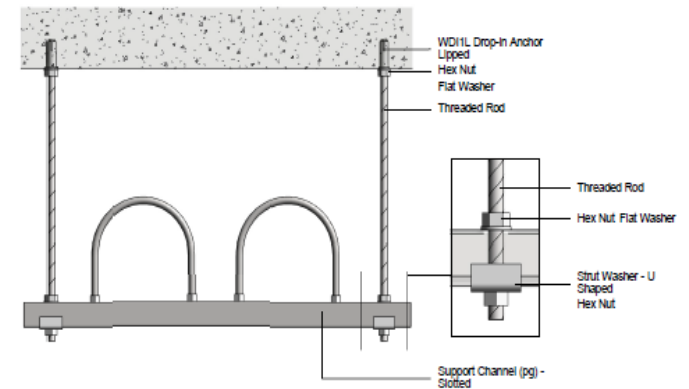
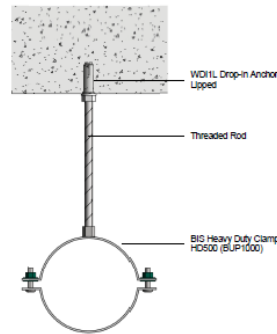
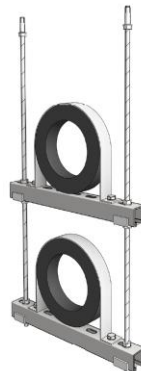
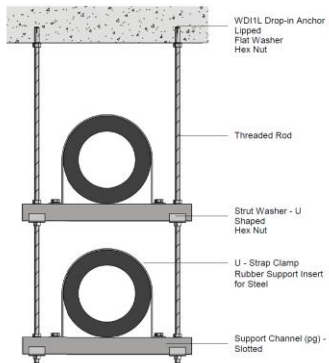
Riser Clamps



Heavy Duty Clamps



U Bolt





Roller Models



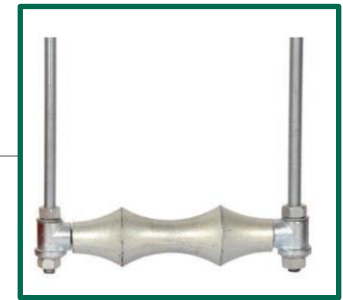
Roller Chair



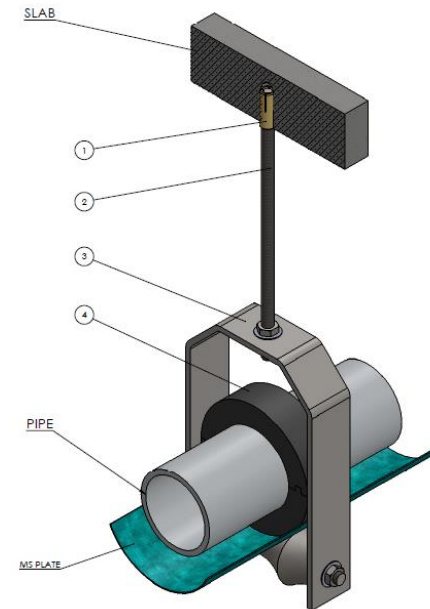
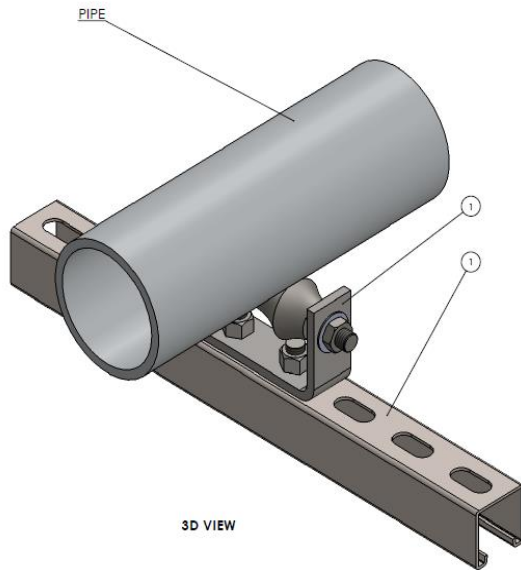
Roller Stand



Roller Hanger

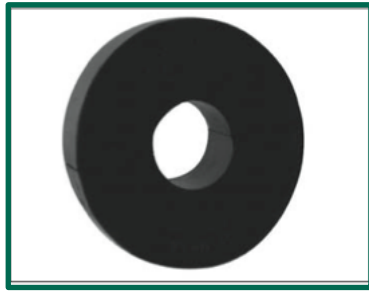


Pipe Rollers





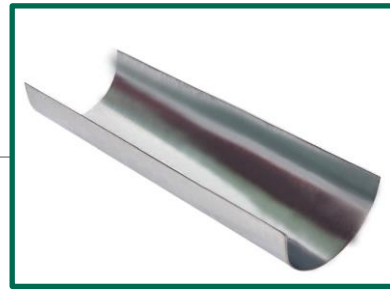
Insulation Protection Products



Rubber Support Inserts



PIR Foam



Insulation Protection Shield



Insulation Protection Saddles

- Rubber Support Inserts are inherently superior to wood , and have high load bearing capacity.
- Dimensionally accurate as each piece is machine molded.
- Self Extinguishing Rubber Inserts can also be provided.
- Almost entire range of pipe supports can be customized to suit the net effective OD of inserts

- insulation shell (thickness 20,30,40 & 50 mm) with pipe clamp BIS Bifix® 300
- A vapor sealed connection with pipe

insulation can easily be made by use of aluminum tape

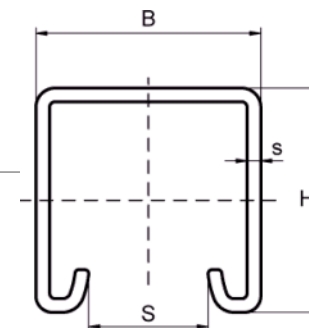
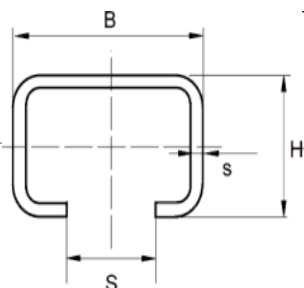
- size and specific weight are tuned to pipe weight

- material: clamp of steel; insulation shell made of PIR thermally hardening foam with a moisture proof outer covering of glass-fiber reinforced Aluminum foil

- does not contain CFC, HCFC, formaldehyde or cadmium



Fixing Rails



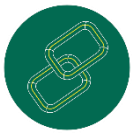
BIS RapidRail®

- WM 0, 27 x 18 mm
- WM 1, 30 x 15 mm
- WM 15, 30 x 20 mm
- WM 2, 30 x 30 mm
- WM 30, 30 x 45 mm
- WM 14, 38 x 40 mm

BIS RapidStrut®

- 41 x 21 x 1,5 mm
- 41 x 21 x 2,0 mm
- 41 x 21 x 2,5 mm
- 41 x 41 x 1,5 mm
- 41 x 41 x 2,0 mm
- 41 x 41 x 2,5 mm
- 41 x 62 x 2,5 mm
- 41 x 82 x 2,5 mm
- 41 x (2x21) mm
- 41 x (2x41) mm
- 41 x (2x62) mm
- 41 x (2x82) mm

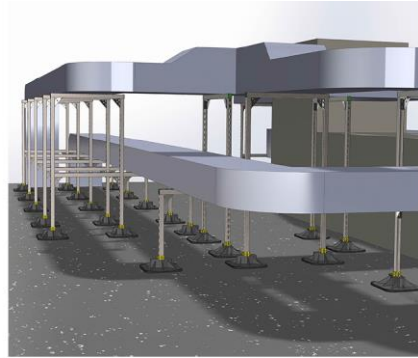
szyna	rys.	waga (kg/m)	cm ⁴ moment bezwładności		cm ³ wskaznik wytrzymałości	
			I _x	I _y	W _x	W _y
41/21-1,5	A	1,22	0,81	3,69	0,74	1,80
41/41-1,5	A	1,70	4,34	6,06	2,09	2,96
41/21-2,5	A	1,84	1,04	5,30	0,93	2,59
41/41-2,5	A	2,62	6,02	9,01	2,87	4,97
41/62-2,5	A	3,44	17,73	12,91	5,64	6,30
41/82-2,5	A	4,24	37,15	16,62	8,97	8,11
41x(2x21)	B	3,88	5,98	10,72	2,85	5,23
41x(2x41)	B	5,48	36,00	18,14	8,78	8,85
41x(2x62)	B	7,15	111,05	25,93	17,91	12,65
41x(2x82)	B	9,06	240,64	33,35	29,35	16,27



Main MEP Applications



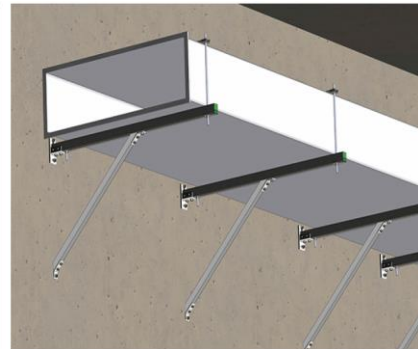
Air Conditioning equipment support



Pipe support with expansion movement capability



Air Conditioning and ventilation supports



Mechanical and electrical supports in mechanical room



Electrical cable tray supports





BIS RapidStrut® Support Channels

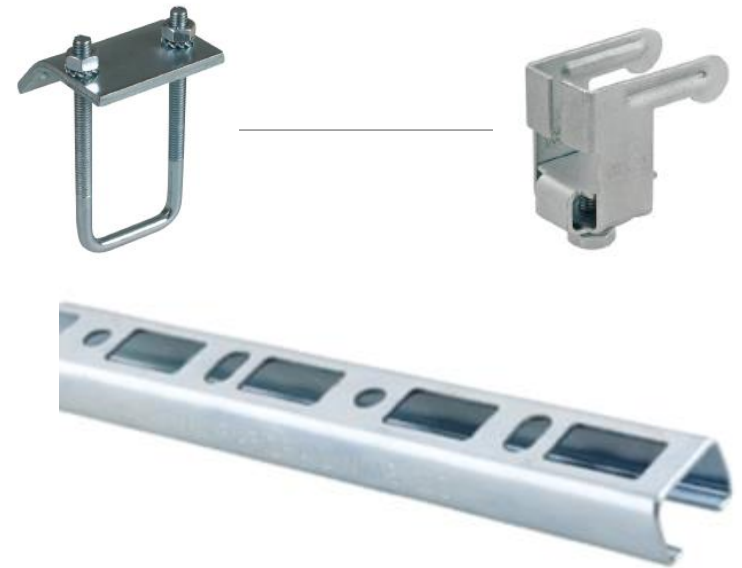


Quick and versatile fixing system

- Accessories 'ready-to-use' pre-assembled
- Accessories suitable for all Strut profiles
- Rail and cantilever arms with serrated profile for extra grip
- Complete range



Types Channel (Rail) Hangers



- BIS Beam clamps type C
- BIS Roofing sheet hanger
- BIS Anchors
- BIS Beam clamps



Maxx Heavy Duty Support System



A new modular steelwork support system for the construction of heavy-duty, load bearing frames which can be used for a wide range of applications.

Our Maxx system is compatible with our other installation systems. We can provide the system fully assembled or in parts allowing easy transportation to site. So we can offer a complete Diamond Walraven solution, no matter how big or small your project.

Maxx offers an alternative to welding and drilling structural steel systems to support very heavy services, saving you time and is also perfectly suited to indoor and outdoor applications. High quality components made from hot dipped galvanized steel.



Maxx Components

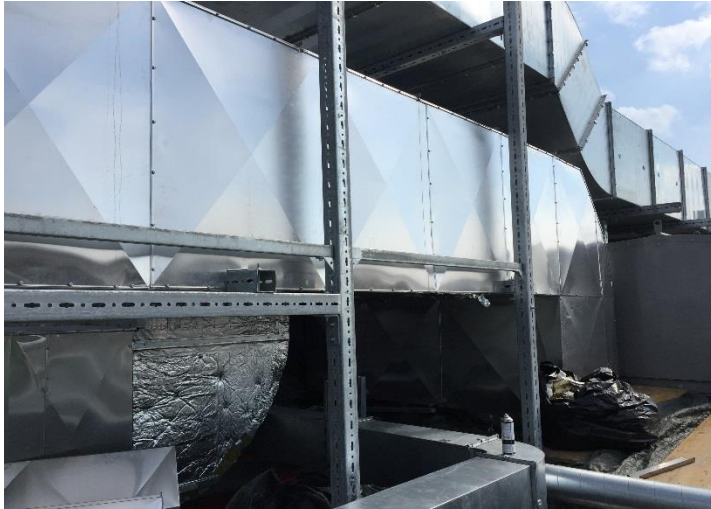


- **Maxx Profiles: Closed Steel Profile with continued perforations on all sides, comes in two sizes: IP100 (100x100x3.0mm) and IP120 (100x120x4.0mm)**
- **Maxx Wall/Base Plate for IP100 and IP120**
- **Maxx Beam Clamp**
- **Maxx Connectors (T-connector, 90° connector, cross connector and linear connector)**
- **Maxx connection accessories (Maxx HammerFix and Maxx Bolts and Nuts)**
- **Maxx 3D coupler**
- **Maxx End Caps for IP100 and IP120**



Maxx Applications

Hira
walraven



BG FILMACO VENTURE CORPORATION



Surface protection: BIS UltraProtect® 1000



Optimal protection

- All applied surface treatments effortlessly withstand a salt spray test of at least 1000 hours*
- Suitable for corrosive environments (C1-C4 in accordance with ISO 12944-2)



20 year warranty**

- Durable solution, products have a life span of at least 20 years
- 20 year warranty on retention of structural integrity and against rusting through when used in an outdoor C1-C4 environment



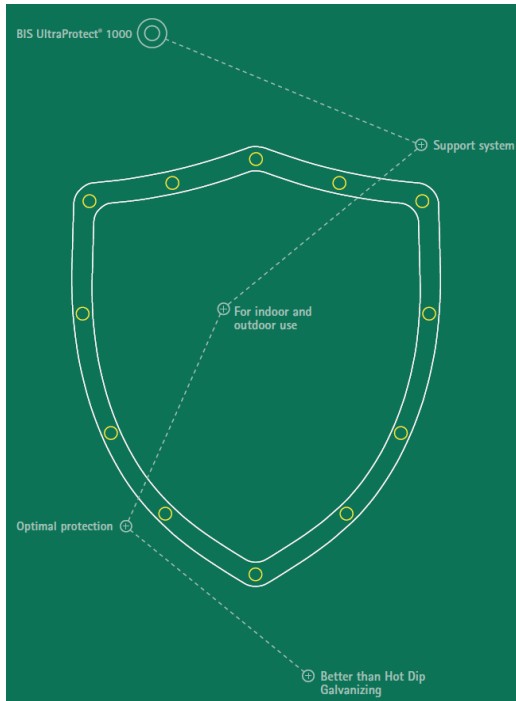
Better than Hot Dip Galvanizing

- Higher corrosion resistance: 1000 hours versus 300 - 600 hours (with a layer thickness of 50 - 80 µm)
- Threaded products are also well protected
- Products feel smooth and are also visually appealing

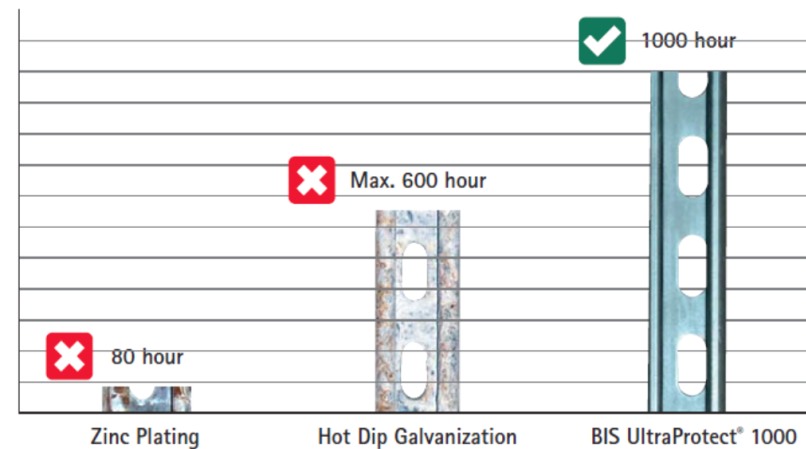


Complementary system

- The products in the BIS UltraProtect® 1000 System combine together perfectly
- Can also be combined with zinc plated, pre-galvanized or hot dip galvanized products



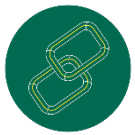
The proof after 1000 hours salt spray test



Fixing Systems

Yeti® Rooftop Installation Support System





Innovative and multifunctional:



Yeti is a modular support system for:

- Climate units
- Pipe works
- Ductwork
- Walkways
- Solar Panels
- Cable Trays
- Pumps

Yeti Support System : the solid and reliable foundation for any Strut based installation!





Diamond Walraven Rooftop Solutions:
Your challenge, our support!



Added values:

- **Safety/Longlife:**

 - BIS UltraProtect[®] 1000 against corrosion
 - No roof penetrations
- **Safety/Expertise:**
 - Engineered load transfers to the building structure
 - On site support anytime
 - Enormous amount of references all over Europe
- **Flexibility:**
 - Easy modernization anytime
 - Modular system
- **Efficiency:**
 - Easy and adjustable installation
 - Less coordination points
 - Total project cost efficiency



Examples





From small AC-units to high load machinery, from service desks to step-overs,

Diamond Walraven can do it all – and more!

Anchors and Fasteners





Heavy Duty Anchors

Walraven offers a complete range of metal and chemical anchors as well as advice and dedicated calculation software, delivering the right solution for any specific load requirement. These products perfectly fit in with our existing offerings and philosophy, from the attractive packaging and clear instructions to expert advice and after-sales service. We also have test tool equipment that directly supports our expertise on the job site.

Drop in anchors

Concrete screws

Through bolt anchors

High load anchors

Shield anchors

Ceiling anchors

Chemical anchors





Walraven Anchor Design Software



- Discover which anchor is the best choice for any given application and load simply by entering the relevant details. Planners and specifiers can quickly and easily carry out calculations and select the right anchors.
- ETA and other applicable certification and technical support are all part of the package.
- The user-friendly tool is based on decades of R&D and practical experience with building projects and fasteners of all types.





Mechanical Anchors



Multiple use



Fire resistance

Material
Zinc plated

Head type
SW13



Multiple use



Fire resistance

Material
Zinc plated

Head type
SW10



Multiple use



Fire resistance

Material
Zinc plated

Head type
Multipoint drive
VZ30



Fire resistance



Seismic
CI

Material
Zinc plated with zinc flake

Head type
Hex head with washer
SW13 / SW15



Fire resistance

Material
Zinc plated with zinc flake

Head type
Loose bolt with hex nut



Material
Zinc plated

Head type
Loose bolt with hex nut



Fire resistance

Material
Stainless steel

Head type
Loose bolt with hex nut



Fire resistance



Seismic
C1+C2

Material
Zinc plated

Head type
Hex bolt



Fire resistance

Material
Zinc plated

Head type
Loose bolt



Multiple use



Fire resistance

Material
Zinc plated



Multiple use



Fire resistance

Material
Zinc plated





Chemical Anchors



WPSF100
Polyester



WVSF200
Vinylester



WPER500
Epoxy

Anti-Vibration Products





Anti-Vibration Products



- Complete range of Vibration isolators for Fans, Pumps, Chillers , AHU , etc.
- Designed as per BS 1726 standards.
- 25mm deflection. 50 % overload Capacity



Spring Isolators



Spring Hanger

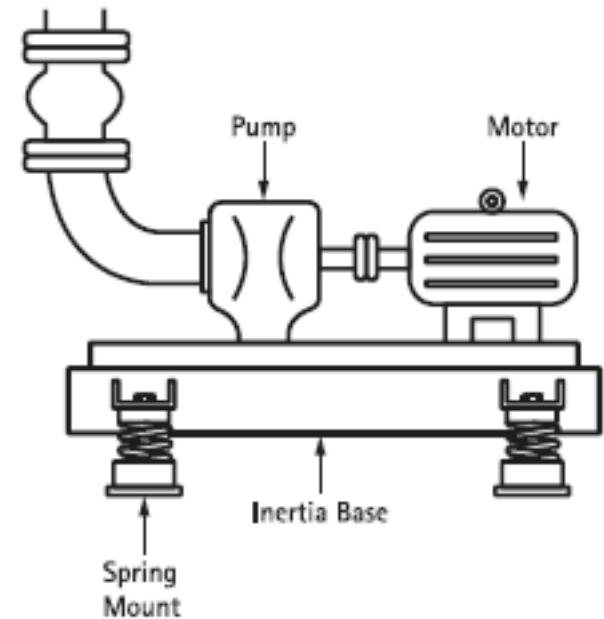
Cup Spring Mount

Housed Spring Mount

These products are used to isolate noise and vibration for: suspended , floor mounting and Horizontally installed equipment



Inertia Base



- Inertia Base is specially designed and engineered to pour concrete, which after curing is used as mechanical vibration isolated reinforced inertia base for the equipment.
- these Inertia Base are recommended to use under heavy start up and shut down vibration amplitude equipment such as generators, IC engines, large fans, centrifugal chillers etc.



Neoprene Isolators

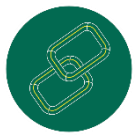


Anti Vibration Hanger

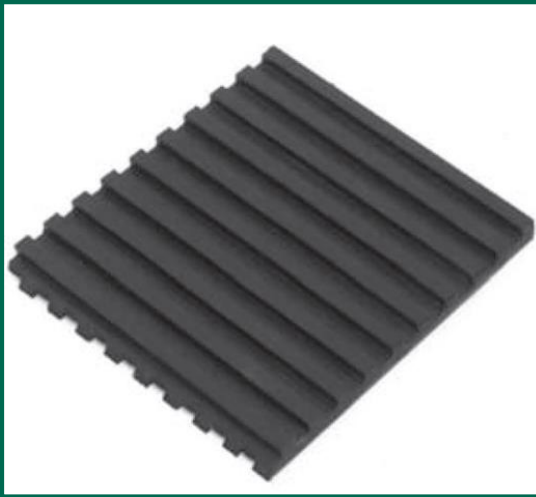


Anti Vibration Mount

- constructed of a neoprene element



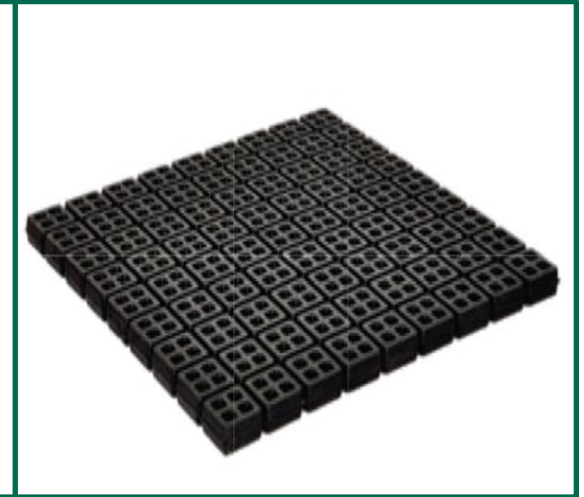
Anti Vibration Pads



Ribbed Mounting Pads



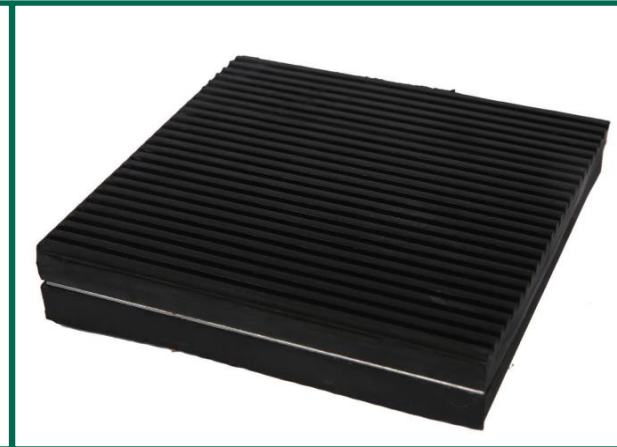
Waffle Pads



Square Cell Pads



Cork Sandwich Pads

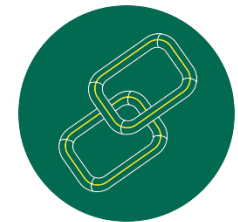


Metal Sandwich Pads



Ripped Multilayer Pads

Manufacturing Standards



Electro Galvanizing Standards



Designation: B 633 – 98^{€1}

Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel¹

TABLE 1 Thickness Classes for Coatings

Classification ^A Number and Conversion Coating Suffix	Service Condition ^{B,C}	Thickness, min µm
Fe/Zn 25	SC 4 (very severe)	25
Fe/Zn 12	SC 3 (severe)	12
Fe/Zn 8	SC 2 (moderate)	8
Fe/Zn 5	SC 1 (mild)	5

Hot Dipped Galvanizing Standards



Designation: A123/A123M – 13

Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products¹



TABLE 1 Minimum Average Coating Thickness Grade by Material Category

Material Category	All Specimens Tested					
	Steel Thickness Range (Measured), in. [mm]					
	<1/16 [<1.6]	1/16 to <1/8 [1.6 to <3.2]	1/8 to 3/16 [3.2 to 4.8]	>3/16 to <1/4 [>4.8 to <6.4]	≥1/4 to <5/8 [≥6.4 to <16.0]	>5/8 [>16.0]
Structural Shapes	45	65	75	75	100	100
Strip and Bar	45	65	75	75	75	100
Plate	45	65	75	75	75	100
Pipe and Tubing	45	45	75	75	75	75
Wire	35	50	60	65	80	80
Reinforcing Bar	100	100

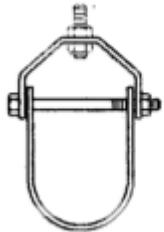
Pipe Support Manufacturing Standards

MSS SP-58-2002

**Pipe Hangers and Supports -
Materials, Design,
and Manufacture**



MSS SP-58



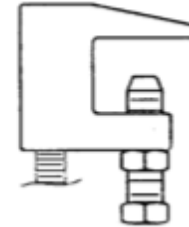
ADJUSTABLE STEEL CLEVIS
HANGER
TYPE - 1



ADJUSTABLE STEEL BAND
HANGER
TYPE - 7



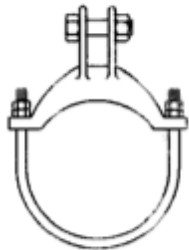
STEEL TURNBUCKLE
TYPE - 13



TOP BEAM C-CLAMP
AS SHOWN OR INVERTED
TYPE - 19



TOP BEAM CLAMP
TYPE - 25



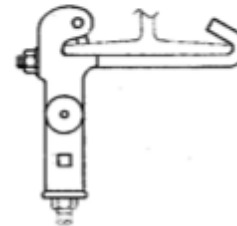
HOOK TYPE PIPE CLAMP
TYPE - 2



EXTENSION PIPE OR
RISER CLAMP
TYPE - 8



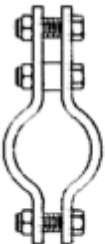
STEEL CLEVIS
TYPE - 14



SIDE BEAM OR CHANNEL
CLAMP
TYPE - 20



PIPE CLIP
TYPE - 26



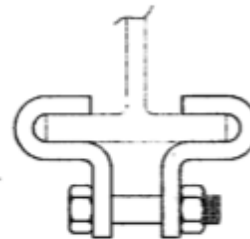
CARBON OR ALLOY STEEL
FREE BOLT PIPE CLAMP
TYPE - 3



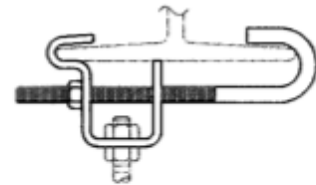
ADJUSTABLE BAND HANGER
TYPE - 9



SWIVEL TURNBUCKLE
TYPE - 15



CENTER BEAM CLAMP
TYPE - 21



SIDE BEAM CLAMP
TYPE - 27



Certificate of Compliance

This certificate is issued for the following:

Product Designation	Hanger Rod Size	Component Description	For Nominal Pipe Sizes, in.
Diamond Walraven Clevis Hanger	M10	Clevis Hanger	3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2, 3, 4
Diamond Walraven Clevis Hanger	M12	Clevis Hanger	5, 6, 8
Diamond Walraven Sprinkler Clamp	M10	Band Hanger	3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2, 3, 4
Diamond Walraven Sprinkler Clamp	M12	Band Hanger	5, 6, 8

Prepared for:

Hira Walraven AC Industry LLC
PO Box 50673
Dubai, United Arab Emirates

FM Approvals Class: 1951

The pipe hanger components listed herein are FM Approved as of May 10, 2018

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

David Fuller
VP - Manager of Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062 USA

May 10, 2018

Date



Member of the FM Global Group

CERTIFICATE OF COMPLIANCE

Certificate Number 20171220-EX15794
Report Reference EX15794-20110826
Issue Date 2017-DECEMBER-20

Issued to: HIRA WALRAVEN AC INDUSTRY LLC
Dubai Investments Park - 2
Dubai UNITED ARAB EMIRATES

This is to certify that representative samples of HANGERS, PIPE
Band Hanger - Series , DMC117.
Clevis Hanger- Series , DMC122

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for safety: ANSI/UL 203, Pipe Hanger Equipment for Fire Protection Service.

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.



Bruce Stambrook, Director North American Certification Program
UL LLC

Any information and documentation including UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at ULCustomerService@ul.com





MANUFACTURERS STANDARDIZATION SOCIETY
OF THE
VALVE AND FITTING INDUSTRY, INC.

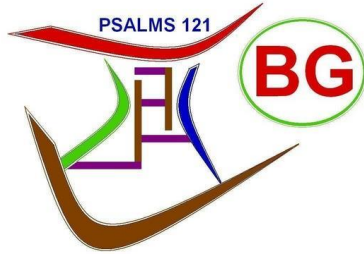
HEREBY CERTIFIES THAT

Hira Walraven AC Industry L.L.C

IS A MEMBER IN GOOD STANDING FOR THE YEAR 2018


Mark A. Clark
President


David Thompson
Executive Director



**BG FILMACO VENTURE
CORPORATION**

Making Life Better...

THANK YOU!