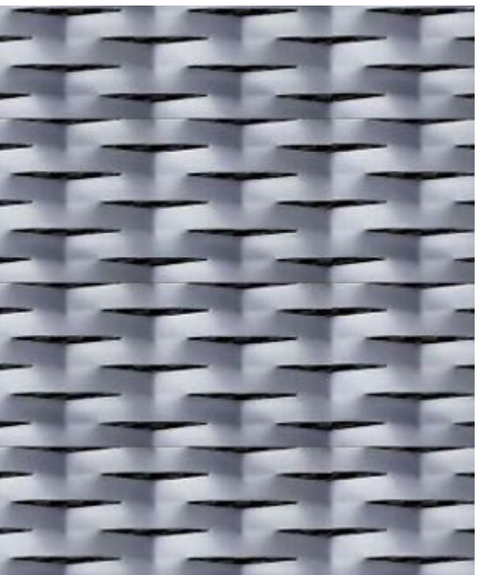
DALAL ARCHITECTURAL METAL SOLUTIONS

Roof Covering & Façade Cladding

COPERMONT
metalli per l'architettura

DALAL
STEEL INDUSTRIES



Dalal Architectural Metal Solutions is a branch of Dalal Steel Industries designed to realize the visions of architects. Dalal Architecture provides a complete supply and installation package for metal façade and roofing systems, where particular attention is devoted to the system's ventilated subtructure, insulating capabilities and sound proofing effects, whilst managing the disposal of stormwater.

Dalal Architecture has its own workshop for tailoring and bending sheet metals with a team working with the best equipment to handle the construction site in a timely and efficient manner. Dedicated to the utmost quality and craftsmanship.

Embracing innovation, Dalal Architecture is continuously introducing new materials and techniques. Material is supplied on a project basis, as technique varies on a project basis. Thus, the following specifications serve as a general guide for the user. And, by no means, is Dalal limited to the described specifications.

Contact Dalal Steel or visit the showroom, located at headquarters, for further information.

Email: architecture@dalalsteel.com

Material Selection

Aluminum

Type	Natural / Pre-painted
Thickness	0.8 - 2 mm
Color	Full range RAL Colors / Special pattern & textures

Material: Alumium, Zinc, Stainless Steel

Decorative Mesh

Type	Natural / Pre-painted
Thickness	1 - 3 mm
Perforation	Variable
Color	Variable

Stainless Steel

Type	Natural / Pre-painted
Thickness	0.5 – 3.0 mm
Color	Variable color, pattern, texture

Weathering Steel

Type	Natural
Thickness	0.5 – 2.5 mm
Color	Black/Brown-red

Zinc

Type	Natural / Pre-painted
Thickness	0.7 – 1.5 mm
Color	Natural (Grey & Black) Pigmented (Brown, Green, Red, Blue, White)

Copper

Type	Natural / Pre-oxidized / Patinated Brass / Bronze / Gold
Thickness	0.5 – 1.5 mm
Color	Dependent on Type

System Advantages:

- Acoustic performance
- Insulating capabilites
- Rapid fabrication & installation
- No exposure of fasterns
- Corrosion-resistant
- Not age-weary
- Design flexibility
- Waterproof
- Curved structures

Façade Cladding Techniques

Dalal façade system is composed of:

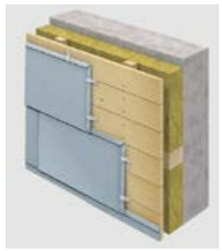
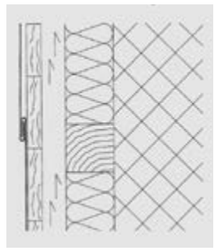
- Aluminum bracket
- Insulation (rockwool or polyurethane)
- Ventilation space (see table)
- Aluminum post beam
- Wood sheathing (fir/OSB/plywood)
- Three-dimensional network of polypropylene fibers
- Metal façade

Standard Values for Height of Ventilation		
Roof Pitch	Overhead Clearance of Ventilated Area (min.)	Width of the Groove (net)
Façade(90°)	2 cm	≥ 2 cm

Several techniques of metal façade coverings are illustrated below:

Interlocking System—Rectangular Shingles

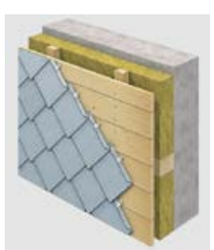
The large rectangular panel allows the texture of the façade to be widely highlighted, with a de-fined outline of each panel. Panels are linked together and can be used in staggered format and on rounded surfaces.

Large Tiles (Thickness 0.7-0.8 mm)	
Nominal Size	Visible Surface (mm)
400/670	333/600
400/1870	333/1800
470/870	400/800
470/3070	400/3000
570/1070	500/1000
670/1270	600/1200

Interlocking System—Rhomboid Tiles

The small panels are in square or rhombus shape. Unlike shingles, which are apparently similar, the rhomboids have implications on all four sides, allowing a chain-like system with seams. The small size of the scales allows you to find solutions to complex geometries. The small size of the tiles also enables it to be used on all rounded surfaces.

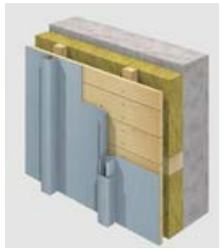
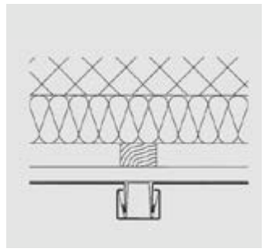

Square Tiles (Thickness 0.7 mm)	
Nominal Size	Net Dimensions (mm)
250	200x200
333	283x283
400	350x350

Diamond Tiles (Thickness 0.7mm)	
Nominal Size	Net Dimensions (mm)
200	168x288
250	223x381
285	263x449

*Note: For larger panels, a Cassette System with various lengths and widths up to 600 mm (Thk. 1.5 mm) may be used.

Batten Seam System—Solar PV Clip Coupling

Two optimum solutions provided, ecological energy consumption and architectural shell covering in seamed technique. Where photovoltaic solar cells may be clipped to the double seam façade, requiring no additional fasteners. This system does not adhere to solar coupling, is also applica-ble, per architectural feature, without.

Batten Seam (Thickness 0.7-0.8 mm)	
Coil Width	Net Width (mm)
470	400
570	500
600	530
670	600

Max length = 20 m
Seam Height = 40 mm

Double Standing Seam

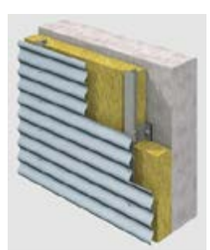
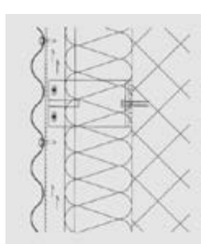
A commonly used system. It involves connecting male and female ends of the panels, followed by automatic crimping along the length. It allows, maximum dimension flexibility, with net width and length variability. Furthermore, it is possible to choose the orientation for the longitudinal joints (vertical, horizontal, or oblique). As well as the arrangement of the transverse joints (aligned or not). It can be applied to round surfaces.

Double Standing Seam (Thickness 0.7-0.8 mm)	
Coil Width	Net Width (mm)
470	400
500	430
570	500
600	530
670	600
700	630
800	730

Max length = 10 m
Seam Height = 25 mm

Corrugated System—Sine Wave Profile

The fluid form of the sine wave gives the profile a harmonious texture. It is possible to arrange the sheets horizontally, vertically, or in an oblique direction. It can be used on rounded surfaces.

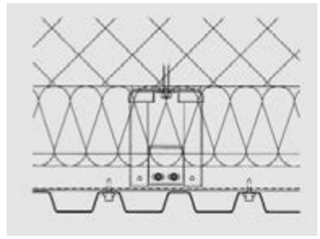




Sine Wave Profile (Thickness 0.8-2 mm)		
Type	Corrugation Height	Profile Width
1	18 mm	836 mm
2	27 mm	778 mm
3	50 mm	1067 mm

Profile length = 4 m

Corrugated System—Trapezoidal Profiles

The distinctive ribbed design may be applied in all formats (vertical, horizontal, and oblique). The incidence of light is more intense in this corrugated profile. It can be used on vertically rounded surfaces.

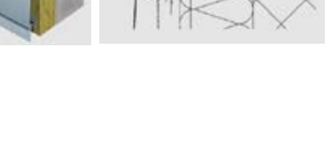


Trapezoidal Profile (Thickness 0.8 & 1 mm)		
Type	Bead Height	Profile Width
1	25 mm	700 mm
2	25 mm	768 mm

Profile length = 4 m

Reveal Panel System

The panels have a tongue and groove system, with a varying shadow joint width. The panels are installed vertically. It may be installed in any direction (vertical, horizontal and oblique).

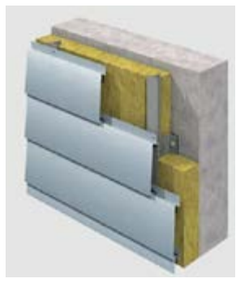


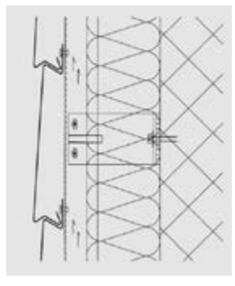
Reveal Panel (Thickness 1 mm)	
Shadow Joint Width	0-30 mm 200-333 mm

Panel Length = 4 m

Horizontal Panel System

The difference between this system and the Reveal System is that this system has a strictly de-fined groove (shadow joint). Also, the panels are installed horizontally. It can be used on vertical round surfaces yet not horizontally round surfaces as the Reveal System. This technique is flexi-ble in orientation (vertical, horizontal, or oblique).





Horizontal Panel (Thickness 1 mm & 1.2 mm*)	
Shadow Joint Width	20 mm 200-333 mm

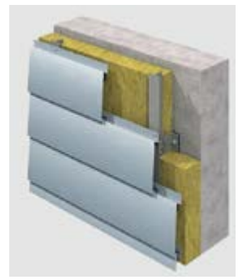
Panel Length = 4 m

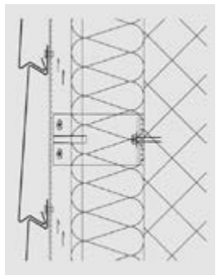
*Width < 250 mm — Thk. 1.0 mm

*Width ≥ 250 mm — Thk. 1.2 mm

Shiplap System

The incidence of light on the particular geometry of the façade creates interesting alterations of shadows. It can be used on vertical round surfaces.





Shiplap (Thickness 1 mm & 1.2 mm*)	
Profile Wedge Shape	40 - 25 mm
Width	200-333 mm

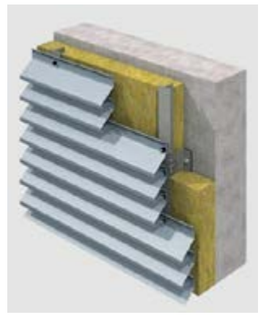
Panel Length = 4 m

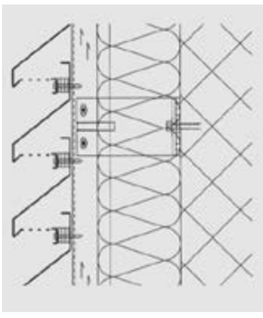
*Width < 250 mm — Thk. 1.0 mm

*Width ≥ 250 mm — Thk. 1.2 mm

Z-profile / Louver Cladding

Special profiles such as Z-Profile systems and louvers systems may be custom designed and similarly installed.

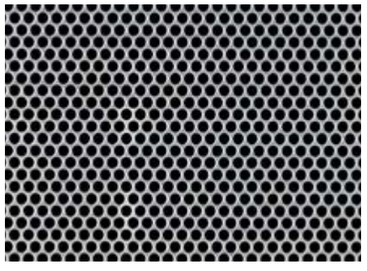




Measurement criteria includes:

- Bending and scrap metal deduction relative to coil width.
- The perforated ventilation drip tray at the bottom and top hat required for the entire development (at ridge and eaves for roof).
- Flashings and copings.
- Detailed work, such as canopies, framed perimeters of windows, doors, and corners, as well as chimney, vent pipes and skylight enclosures (for roof).

Integrated Seamed Window Sill Coping and Façade



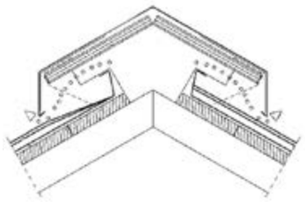
Perforated Ventilation Grid (Galvanized Steel)

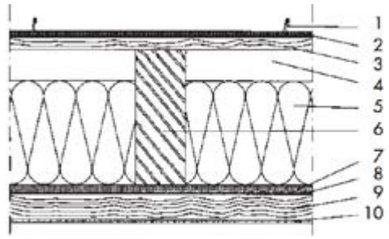
Wall Coping (with an inward slope ≥3º)

Roof Covering Techniques

Dalal provides a ventilated system for roof coverings. The system is composed of the following:

1- Roof covering metal
2- Wood sheathing
3- Ventilation space. (See Table Below)
4- Thermal insulation with a breathable vapor barrier on top.
5- Rafters
6- Vapor barrier, UV resistant
7- Wood sheet
8- Installation level
9- Interior walls





Ventilation Advantages:

- *To eliminate humidity*
- *Avoid condensation & deterioration of material*
- *To lower high summer temperatures between the insulation and the roof covering*

Applicable Metal Work Technique

- Interlocking System—Rectangular Shingles
- Interlocking System—Rhomboid Tiles
- Batten Seam System
- Double Standing Seam

Standard Values for Height of Ventilation		
Roof Pitch	Overhead Clearance of Ventilated Area (min.)	Width of the Groove (net)
With Ridge Ventilation		
≥3° - ≤ 15° >15°	8 cm 4 cm	≥ 4 cm ≥ 3 cm
Without Ridge Ventilation		
≥3° - ≤ 15°	10 cm	≥ 6 cm

Sheet Metal Work & Accessories

Edge Gutter

External Gutter with Downpipe

Vent Pipe

Snow Guards

Chimney Flashing

Dormers

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