T-Seam®

Standing Seam Roofing System

THE COMPANY: TIGER PROFILES & INSULATION LLC

Tiger Profiles & Insulation, the "Roofing and Cladding" company is a comprehensive source to all the construction industry's Roofing, Cladding and Insulation solutions. Established in the UAE in 1993 as the "cladding" arm of the forty year old Tiger Steel Group of Companies, Tiger Profiles & Insulation LLC, known as TPI, operates three plants/factories – one in Abu Dhabi and two in Sharjah.

Tiger Profiles' three plants efficiently serve the GCC, Middle East, Asia and Africa's need for its specialized products and systems. The product line presented by TPI encompasses roof panels, wall panels, floor deck panels, steel and aluminum profiled sheeting, partitioning, sandwich panels, concealed fix wall panels, pre-insulated partitions, cold store panels, standing seam systems (known as T-Seam®), and cold formed sections both standard and customer specific as well as all the required accessories.

From the early beginnings in a small crowded workshop, where profiles were cold roll formed according to a few clients requirements, Tiger Profiles has evolved to a full fledged three plant operation with a workforce of 160 members striving to exceed the sky high standards set by the tiger's integrity and dedication to superior performance and technology.

TPI extends Design, Engineering, Manufacturing, Supply and Installation services to its clients, thus placing it in a position to serve its clients as a one stop-source. In parallel, TPI is the sole distributor – Middle East, Asia and Africa for SolaCoat and SolaSteel triple award winning eco-friendly "green" heat reflecting coatings.

With an annual production capacity of Z and C Purlins exceeding 2,600,000 meters, TPI is classified as one of the largest producers in the UAE. TPI is recognized as a regional and major manufacturer of PU/PIR/Mineral wool insulated panels; its annual production capacity of its continuous PU line that exceeds 4,000,000m2.

Standing tall, Tiger Profiles has raised itself from the crush of the crowd by setting international standards that set it apart from any other companies in the business. Adhering to ISO 9001, ISO 14001 ,OHSAS 18001, FM Approvals (USA), DBIT Approvals (Germany) and Dubai Municipality and Dubai Civil Defense is only the tip of the commitment to standards by TPI's management. Its commitment to the Environment is loud and clear – an active member of the Emirates Environmental Group, Tiger Profiles not only works on protecting the environment, but also works on caring, cleaning and maintaining it. Tiger Profiles is also a member of the US Green Building Council.

WHAT TPI STANDS FOR

Technology: Instinctively on the prowl for the prime in metal building technology, the tiger's sharpness and cunning give it the prowess of the born pack leader.

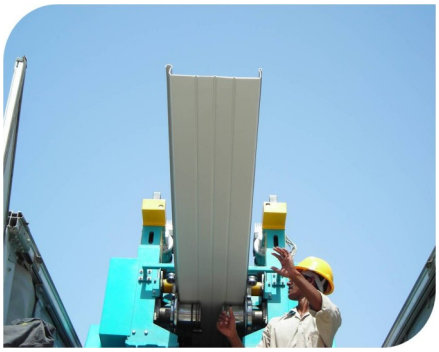
Performance: In an environmental "jungle" where "performance" is the key to survival, the tiger's boundless endurance, its speed and agility, its quality and attention to detail are its trademarks that make it a supplier of the highest order.

Integrity: The tiger's "integrity" is in taking no more than it needs.

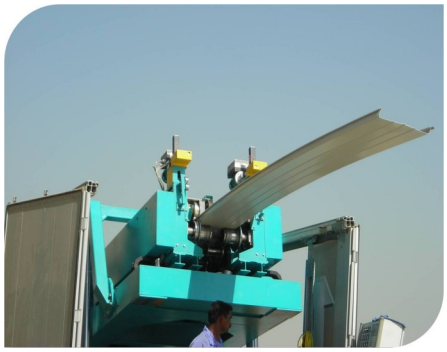
MISSION

Tiger Profiles and Insulation aspires to maintain its standing as the "Roofing and Cladding" Company—one source for prime roofing, cladding and insulation solutions.

Portable T-Seam® Roll Forming Machine



T-Seam® Roll Forming Machine



T-Seam® Roll Forming Machine

THE PRODUCT: T-SEAM® - STANDING SEAM SYSTEM

T-Seam® belongs to the family of standing seam roofing system, wherein the roof sheets are fixed to the structure without puncturing the sheets. This is possible by using specially designed aluminum extruded seam clips. The adjacent seams of the T-Seam® sheets are overlapped over the aluminum extruded clips and closed with an electrically operated seaming machine. The special design feature of the seam clips allows for the expansion movements of the T-Seam® panel while at the same resisting the wind uplift forces.

Tiger Profiles own brand of standing seam solutions comes complete with internationally recognized approvals, a thorough accumulation of experience and an acquired ability to cater to highly complicated requirements. T-Seam® is the ideal solution for projects where design flexibility, superior performance and outstanding durability are key. Roll-formed in the factory or on site, the roof sheets, which can be formed in lengths exceeding 100m in a single panel, are easily fixed to the structure. The lack of need for the penetration the sheets, eliminates the risk of water leakage and rust.

With superior weather - tightness and a long, maintenance-free life, T-Seam® roofs are the popular choice for new construction, retrofit applications and expansions to existing buildings. T-Seam® roofs easily provide beyond 15 years of superior maintenance-free performance. T-Seam® roofs are engineers to withstand rain, wind snow and sun, in addition to their ability to endure the negative effects arising from thermal expansion.

In parallel to its existing product solutions, both for T-Seam and its other offerings. Tiger Profiles recently earned the pride of presenting T-Seam® in a first time available option - manufactured from “Solasteel” pre-coated eco-friendly heat reflecting coating - (Solasteel - Gold GAIA Award winning pre-coating applicable on metal in all its forms). This Australian product - Solasteel, is available in the Middle East, Asia and Africa only through Tiger Profiles & Insulation.

Able to reflect up to 70% of the heat, to reduce energy consumption by 30-40%, and to protect your metal structure from the effect of thermal expansion, while allowing for points towards LEED and Green Star Ratings & Certification, Solasteel is the ideal environmentally friendly solution for insulated metal roofing and cladding requirements. This Australian product - Solasteel, is available in the Middle East, Asia and Africa only through Tiger Profiles & Insulation.

T-SEAM® - PRODUCTION METHODS

T-Seam® panels can be produced either in the factory or at the project site on a portable roll forming machine. T-Seam® panel can be produced in lengths of upto 100m in a single length panel.

Over the years, Tiger Profiles has perfected the know-how and ability to provide its clients with both standard and customized methods. They include:

- **Roll forming on the ground;** suitable for panels of great lengths. Panels are roll formed at the project site, and then lifted using beams to be placed directly onto the roof. This method can accommodate panels in lengths of upto 100m.

- **Air suspended/air-borne;** suitable for sites where space is not adequate on site for the free movement of the roll forming of the panels then lifting them into place. This method consists of air suspending the machine next to the roof top to be covered, and then the panels are roll formed directly onto the roof such as in the method above. This method is used to overcome the most difficult accessibility constraints allowing for easy and safe roll forming.

- **Directly on to the roof;** suitable for project sites where there is enough space for the roll forming machine to lie adjacent to the location of the roof to be roll formed. This method caters to sophisticated roll forming requirements based on design requirements.

Roll Forming on the Ground

Air-Suspended Roll Forming

Roll Forming onto the Roof

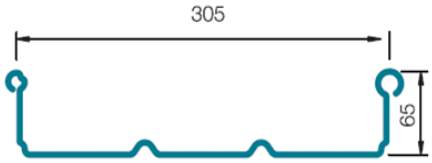
SHAPES & DIMENSIONS

Ideal for use on new buildings as well as retrofit applications, standing T-Seam® profiles are available in various widths and heights to accommodate almost any project. In most instances, T-Seam® panels are roll formed on site by a portable T-Seam® manufacturing machine, thereby incurring less chance for panel damage during shipping.

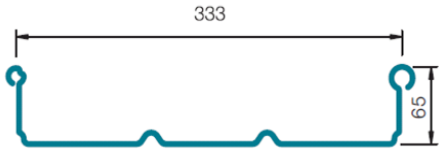
T-Seam® panels are very flexible and can be supplied in various shapes:

Straight T-Seam®:

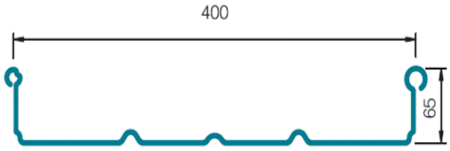
- **T-Seam® 65/305**



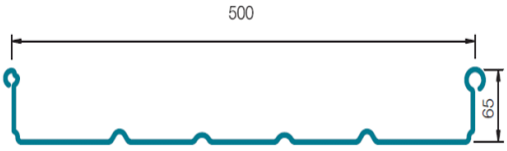
- **T-Seam® 65/333**



- **T-Seam® 65/400**



- **T-Seam® 65/500**



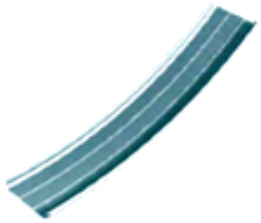
T-Seam® Dead Weights (kg/m²)

Steel	Panel Weight (kg/m²)					
Thickness	0.55	0.60	0.70	0.80	0.90	1.00
65/333	6.48	7.07	8.25	9.43	10.61	11.79
65/400	6.15	6.71	7.83	8.95	10.07	11.19
65/500	5.79	6.31	7.36	8.42	9.47	10.52

Aluminum	Panel Weight (kg/m²)				
Thickness	0.70	0.80	0.90	1.00	1.20
65/333	2.86	3.27	3.68	4.08	4.91
65/400	2.71	2.10	3.49	3.88	4.65
65/500	2.55	2.92	3.28	3.64	4.38

Convex Curved T-Seam®
Is available with a minimum radius as follows:
Aluminum 1.5M
Steel 8M

Concave Curved T-Seam®
Is available with a minimum radius as follows:
Aluminum 6M
Steel 10M



Tapered T-Seam®
Is available with dimensions as follows:
Min width : 250mm
Max. width : 540mm

MATERIAL

The T-Seam® panels can be supplied in the following choices of materials:

- Aluminum, Galvanized or Stainless Steel pre-coated with Solasteel (eco-friendly green, award winning heat reflecting coating) - usage reflects 70% of heat.
- Aluminum Alloy AA 3105 or AA 3004;
- Galvanized, color coated steel;
- Stainless steel;
- Copper;
- Zinc.

FINISHES

Aluminum panels can be supplied in either natural aluminum in stucco or mill finish. T-Seam® can also be supplied in color finishes of various systems such as polyester, multi coat PVDF, Polyurethane etc.

Special pigmented organic color coatings to the roof's base material not only enhance the aesthetic appearance but also provide additional corrosion protection.

A recently released option is Solasteel pre-coated eco-friendly heat reflecting metal, which provides heat reflection of upto 70% (usage increases points for LEED and Green Star Ratings).

T-Seam® can be supplied in the full range of RAL colors as well as in any special colors per client's request.

LONG-LASTING

Properly installed standing T-Seam® metal roof will provide longevity with very little maintenance. This exceptional return on investment makes the T-Seam® design the most cost-effective choice for many customers. T-Seam® roofing system is as versatile as it is cost-effective.

WEATHER-TIGHT

T-Seam® roofs are engineered to withstand rain, wind, snow and sun. Each panel is joined together by a mechanically locked T-Seam® raised above the roof's drainage plane. The joint-free T-Seam® panel ensures that T-Seam® roofs roof will be leak-free for years to come.

ENERGY EFFICIENT

The T-Seam® roofing system are normally insulated using Fiberglass blankets, to make it energy efficient. The floating action of the roof allows to expand and contract independent of the insulation, thus eliminating roof deterioration as it normally happens in conventional built up roofs.

HIGH PERFORMANCE ROOFING SYSTEM

T-Seam® roofs can be used in almost any situation, from commercial to residential, from small storage buildings to large manufacturing plants. This roofing system lasts longer, needs less maintenance and offers superb versatility.

EASY TO MAINTAIN

Unlike flat built-up roofs that require frequent maintenance, T-Seam® roofs offer 15 years and more of trouble free performance with minimum maintenance and expense.

DURABLE AND CORROSION RESISTANT

T-Seam® metal roofs are designed to ensure long-term durability and an aesthetically pleasing appearance. While being resistant to corrosion and fading.

Aluminum forms a protective coat of a natural oxide layer when exposed to the atmosphere. This oxide layer will act as a corrosion protective coat against normal weathering. However if the roof is exposed to a highly aggressive atmosphere, then it is recommended to apply a protective resin coating of a minimum thickness of 25 microns.

Precaution must be taken to avoid direct contact of aluminum with dissimilar materials such as bare steel, copper, concrete , timber etc. Direct contact with dissimilar material in the presence of moisture can cause electrolytic corrosion.

It is recommended to separate the dissimilar material with the use of plastic tapes, bituminous layers, etc. In case of coated material, separation tapes may not be required.

BREATHING ROOF

T-Seam® is a breathing roof, in the sense it allows the trapped moisture to escape through the seam. The T-Seam® joints do not use any sealants. The weather tightness is guaranteed with the capillary groove provided in the small seam.

Non hygroscopic insulation materials such as mineral wool will not absorb any moisture in the roof construction but will retain the same on the surface of its fibers. During the daytime, the temperature rises and the trapped moisture is transformed to vapor, which results in an overpressure that is released through the seams. This overpressure happens only within the roof construction and this ensures that the flow of the vapor is always from the inside to the outside.

RELIABLE

T-Seam® roof ensures adequate drainage from rain and snow, thus solving water leakage problems. The system is uniquely designed to handle the effects from thermal movements. The clips used in the system have a movable feature that allows the panels to expand and contract with temperature changes. (For more details on clips see "Clips" section Page 7).

CONDENSATION RISK

Condensation happens when the moisture is cooled below its dew point temperature. The pre-requisites for the condensation risk is the presence of moisture and the temperature differential. The risk of moist air entering the T-Seam® roof construction from the external atmosphere is remote due to the overpressure in the roof construction, so the moist air enters the roof construction from the building interior. The moist air will have to travel through the insulation and touch the cold inner surfaces of the T-Seam® roofing so that it can condense.

WALKWAY

T-Seam® roofs are accessible both during and after installation, for maintenance and cleaning. It is recommended that proper access walkways are installed for access to roof mounted units such as skylights, exhausts and chimneys which require regular maintenance.

Fully seamed T-Seam® roofs can be walked upon, without the use of load spreading elements as per the following support spacing.

	65/333	65/400	65/500
0.80	2.75	2.65	2.50
0.90	3.200	2.95	2.60
1.00	3.70	3.50	2.70
1.20	3.80	3.70	2.90

It is also recommended to use higher density, rigid insulation panels at the eaves (near gutter) and the ridge in order to avoid any materials deformation due to regular foot traffic.

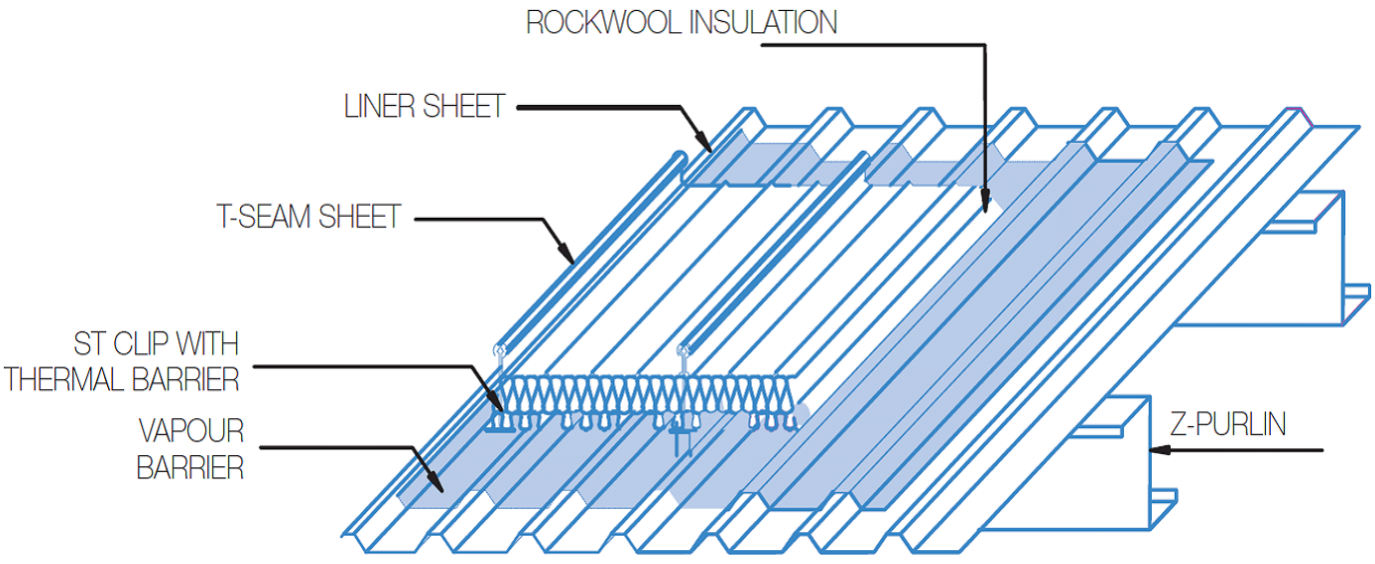
During installation of the roof, the areas of the roof which are either frequently walked on or used for transport of materials should be protected with temporary walkways. These walkways should be anchored to the seam clips to avoid slipping of the walkway elements.

FALL ARREST SYSTEM

T-Seam® fall arrest system offers a safe and reliable solution for securing the personnel accessing the roof. This consists of a stainless steel wire rope which is fastened permanently to the seam of the roof with specially designed stainless steel anchors. The safety harness is then connected to the fall arrest clip spacings. The wire is kept at the right tension with the help of turnbuckles.

Fall Arrest System

Safety Harness



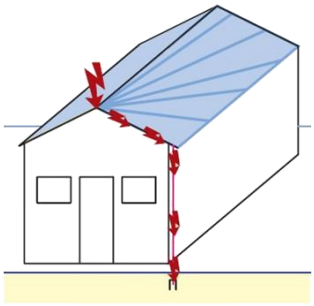
Vapor Check Details

Fire Protection

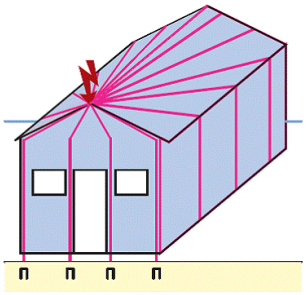
T-Seam® Aluminum alloy are classified as Non- Inflammable to category A1 as per DIN 4102-4. T-Seam® roofing system with insulation materials such as mineral wool/ Rock wool are classified as resistant to flying sparks and radiant heat without any special verification. In parallel, T-Seam® has met the fire resistance requirements by FM Approvals (USA) as a roofing system of Class A.

Lightning Protection

T-Seam® aluminum roofing system offers effective protection against lightning strikes. The T-Seam® sheet thickness should be minimum 0.70mm to qualify as a natural part of the air termination network. This minimum thickness ensures that there is no melting of the sheet at the point of impact or the ignition of the inflammable materials under the covering surface. T-Seam® aluminum profiled sheets can be considered as a lightning conducting system. However the T-Seam® roof sheets must be connected to the earth and all the seams must be fully zipped.



T-Seam® as a Lightning Conductor



T-Seam® as a Protective Screen

Thermal Expansion

All metal materials are subjected to linear expansion and contraction due to changes in the temperature. The amount of expansion/contraction will depend on the coefficient of expansion of metals, temperature difference and the length of the building element.*

The rule of thumb states that the expansion of the metal element per meter length, for a temperature difference of 50°C, will be:

- Aluminum 1.00mm
- Steel 0.50mm

** Using Solasteel Tiger Profiles heat-resisting pre-coated metal, will ensure protection against both the heat and thermal expansion.*

Formula for calculation of thermal movement states:

Material	Coefficient of expansion mm/mk
Aluminum	0.024
Copper	0.017
Steel	0.012

$\Delta l = Lo \times K \times (T2 - T1)$
Δl = Change in length-mm
Lo= Element length-M
K = Coefficient of Expansion- mm/mK
T2 – T1 = Temperature Diff

The longitudinal expansion movements are accommodated by the T-Seam® profiles sliding over the specially designed clip head. The lateral movements are not much and can be easily accommodated by the flexibility of the profile across the width. The expansion and the contraction of the sheets should not be restricted. The sheet end details must be carefully designed to allow the expected movements of the sheets.

Design Principle

The design of a standing seam roof is based on the following principles:

- No puncturing of the sheets for fixing;
- Allow the sheets to move freely to accommodate the thermal expansion;
- Ensure the sheets are fixed firmly to the sub structure;

All the above requirements are met through the use of a specially designed T-Seam® clip which allows for positive anchoring of the roof to the sub-structure at the same time allowing for thermal movements.

The T-Seam® clips are provided with thermal pads to act as a thermal break.

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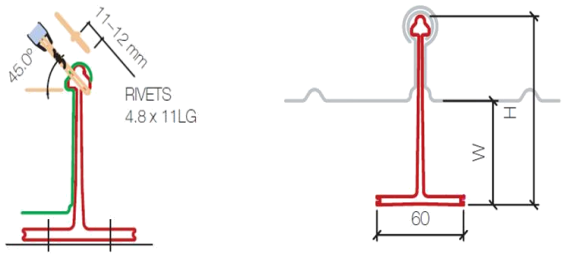
T-SEAM® CLIP SIZES

The T-Seam® clips are supplied in variable heights to meet the various insulation thickness requirements.

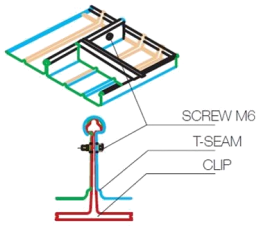
T-Seam® Clip Sizes		
Clip Type	**H (mm)**	**W (mm)**
T-25	81	25
T-50	106	45
T-75	131	70
T-95	151	90
T-105	161	100
T-115	171	110
T-125	181	120
T-135	191	130

FIXED POINT CONSTRUCTION

- Type 1: A hole is drilled through the small seam directly into the clip-head and blind rivet inserted. The head of rivet gets covered by the large seam of the next head.



- Type 2: The T-Seam® flange is bolted to the clip after zipping.



ROOF PITCH

T-Seam® can be effectively used on very low building slope due to its inherent design. The adjacent seams are overlapped and closed with an electrically operated seaming machine. Also the sheets are roll-formed on site in a single length, avoiding overlap joints. Both these features allow the roof slope to be reduced as low as 1.50 degrees or 2.60 percent.

This limitation of the roof slope can be further relaxed if the sheets run in single length from ridge to eaves and all the roof penetrations are properly welded. In this case the roof slope to be minimum such that no water pooling takes place and the water can freely flow to the drainage channels.

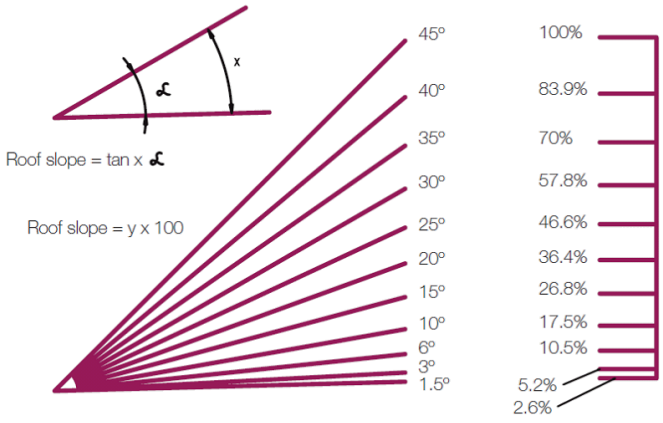
In roof construction where the sheets are overlapped and sealed with silicon sealant, then a minimum roof slope of 2.6 degrees or 5 percent should be used.

Minimum roof pitch
Without horizontal joints 1.5°(2.6%)

- Running from the eaves in one length
- All joints are welded
- Factory welded soakers welded into roof skin

With horizontal joints 2.9° (5.0%)

- With sealed horizontal joints
- Soakers welded into the roof skin
- Factory welded soakers sealed into roof skin

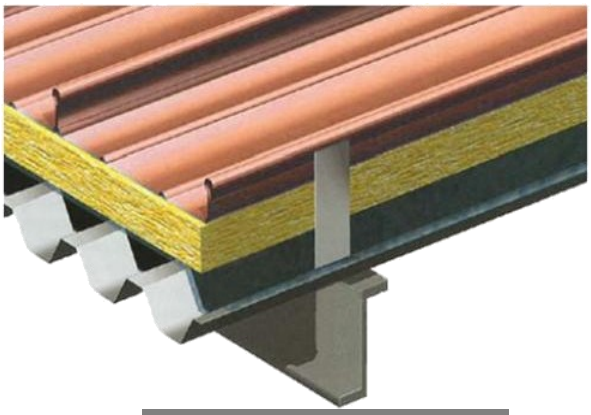


Roof Pitch in Degrees & Percentages

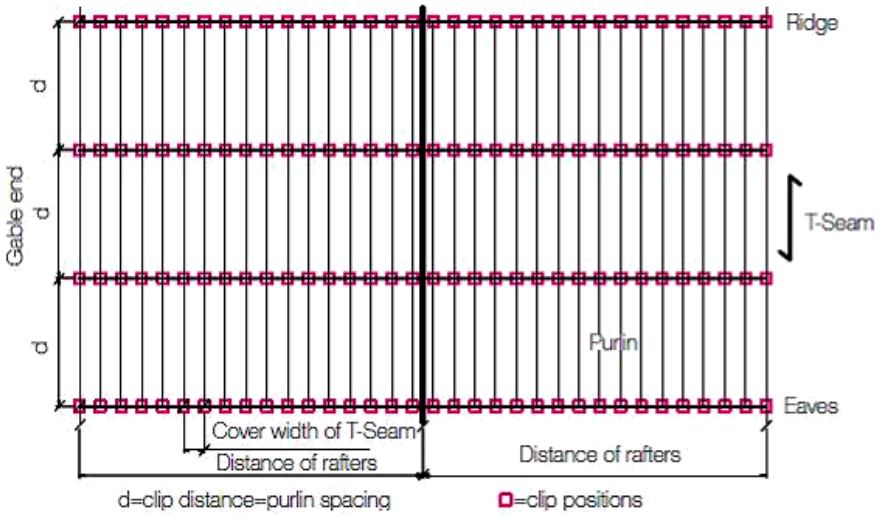
PURLIN ROOF CONSTRUCTION

In this construction the Inner deck sheet and outer T-Seam® roof corrugations run parallel to each other. The inner deck sheet will be spanning from purlin to purlin. The T-Seam® clips are either fixed directly to the purlin through the valley of the corrugation of the deck or fixed to the omega profiles which are in turn fixed to the purlin/ inner deck. The clips can be directly fixed to the purlin only if the pitch of the inner sheet is a module of the T-Seam® width. Otherwise an omega profile will have to be fixed over the inner liner sheet.

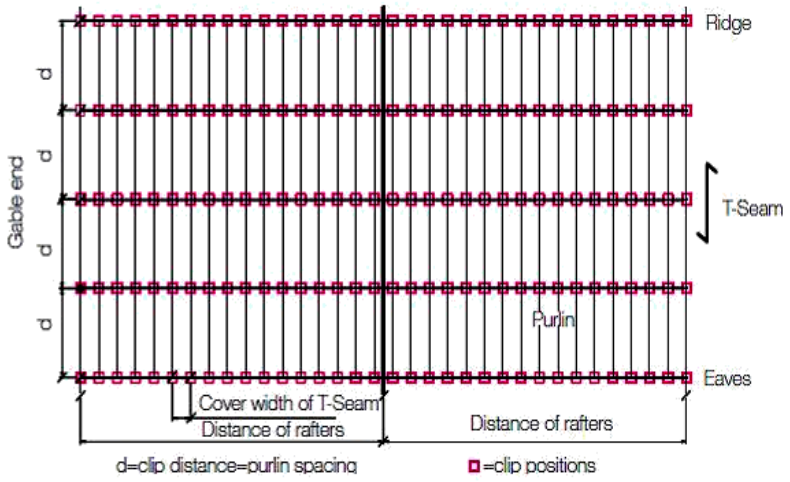
For curved roof as well as re-roofing applications, it is recommended to use the omega spacer profile.



Purlin Roof



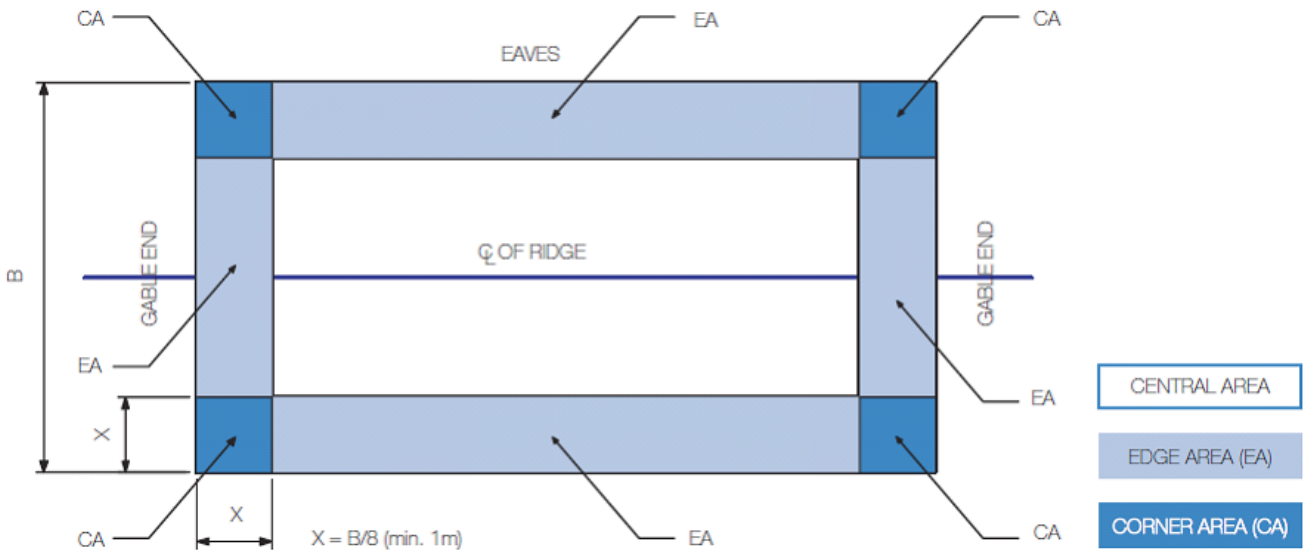
Type 1 Aluminum Clips



Type 2 Aluminum Clips clip positions with closer spaced purlins

- Given values are not standard they only serve as guidelines.
- Clip fixing shall be directly to the trapezoidal liner profile with min. thickness of 0.70mm. Two STS per clip are to be used.
- The clip spacing must not exceed half the supporting width of the trapezoidal steel deck.

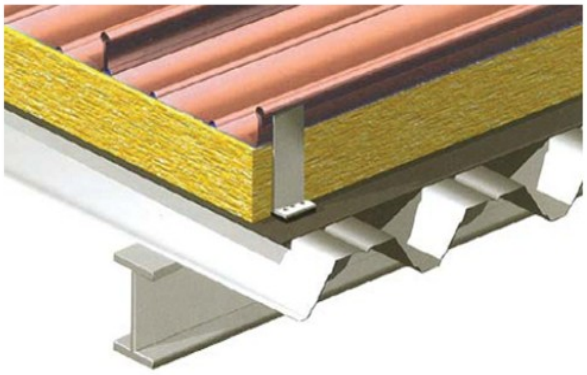
T-Seam® Type	Sheet Thickness (mm)	Imposed Load kN/m²			Wind Suction					
					Building Heights					
					0-8m		8-20m		>20m	
		0.75	1.00	1.25	EA*	CA*	EA*	CA*	EA*	CA*
65/333	0.80	2.50	2.35	2.20	2.20	1.65	2.00	1.40	1.80	1.30
	0.90	3.15	2.95	2.60	2.75	2.00	2.50	1.50	2.20	1.30
	1.00	3.70	3.40	3.15	3.10	2.50	3.00	1.70	2.20	1.30
	1.20	3.80	3.60	3.35	3.25	2.75	3.00	1.70	2.20	1.30
65/400	0.80	2.45	2.25	1.95	2.00	1.55	1.80	1.20	1.60	1.00
	0.90	2.90	2.75	2.50	2.60	1.75	2.30	1.30	1.70	1.00
	1.00	3.40	3.20	3.00	3.00	2.15	2.50	1.40	1.85	1.00
	1.20	3.70	3.40	3.10	3.10	2.25	2.50	1.40	1.85	1.00
65/500	0.80	2.10	1.85	1.80	1.60	1.15	1.60	1.00	1.40	0.80
	0.90	2.60	2.25	2.20	2.20	1.25	2.10	1.10	1.50	0.80
	1.00	3.20	2.75	2.40	2.40	1.45	2.40	1.00	1.50	0.80
	1.20	3.40	2.85	2.40	2.40	1.75	2.40	1.00	1.50	0.80



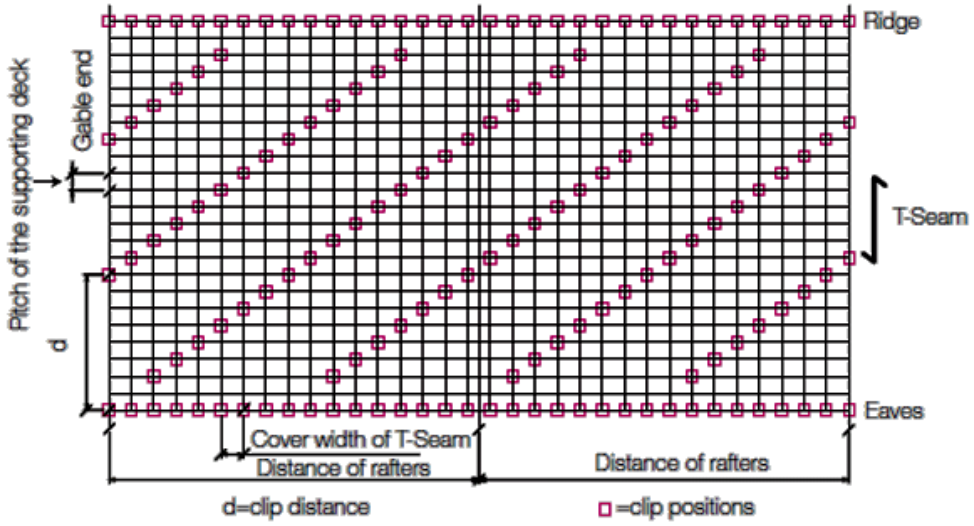
RAFTER ROOF CONSTRUCTION

In this construction the Inner deck sheet and outer T-Seam® roof corrugations run perpendicular to each other. The inner deck sheet will be spanning from rafter to rafter. The T-Seam® clips are either fixed directly to the top of the corrugation of the deck or fixed to the omega profiles which are in turn fixed to the inner deck. The minimum thickness of the steel inner deck for direct fixing of the clips should be 0.70mm. In this construction the inner steel deck transfers all the loads from the external T-Seam® roof to the rafters, hence to be designed properly. It is very important to fix the clips in a pattern, which distributes the loads evenly on the inner deck sheet.

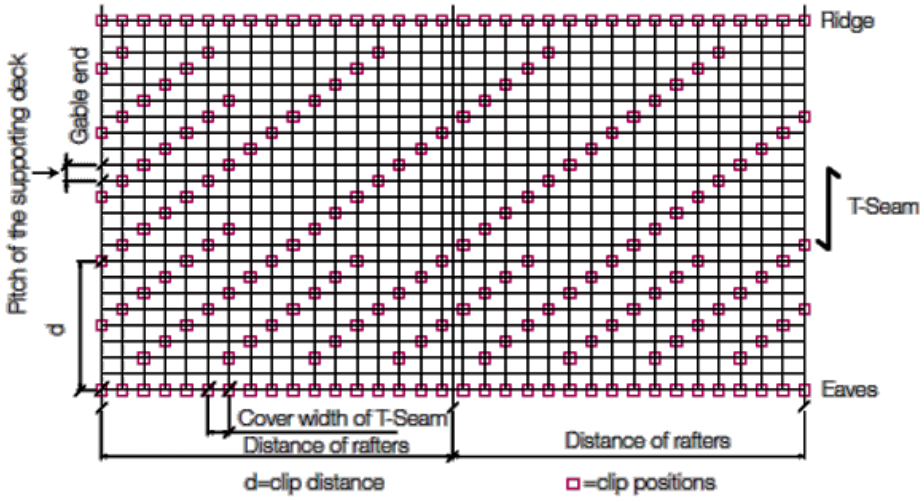
- A continuous row of clips to be fixed at the ridge and eaves location.
- In between the clips are fixed diagonally, to avoid the overloading of the inner deck corrugation.
- The location of the clips to be as per the installation drawing.



Rafter Roof



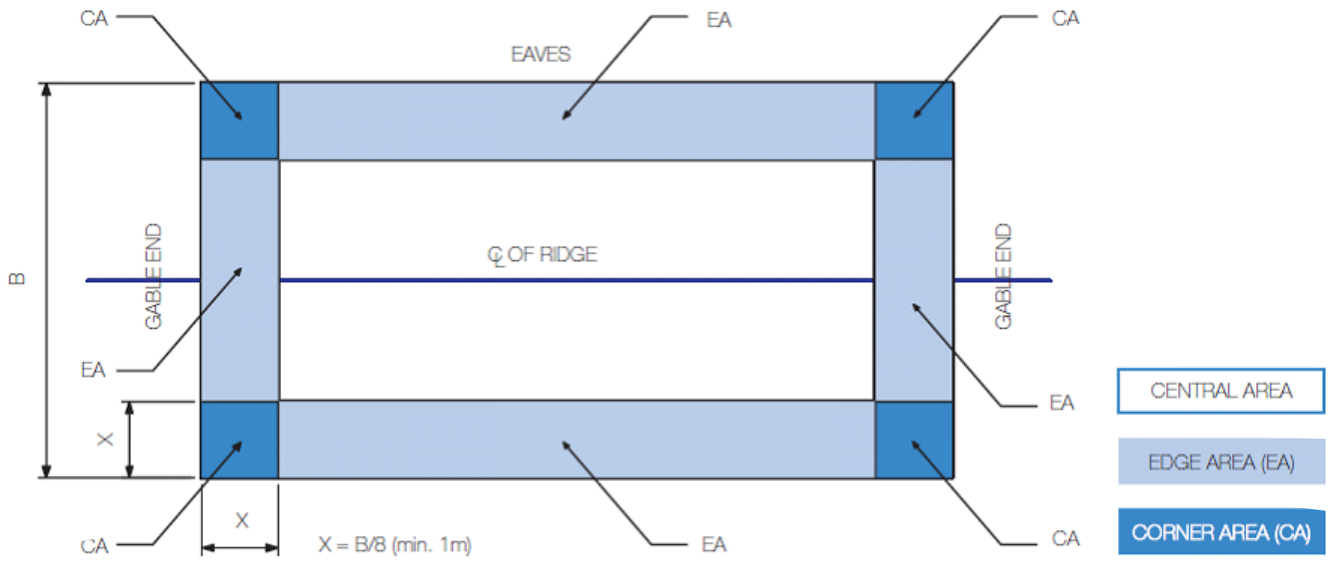
Type 3 Aluminum Clips



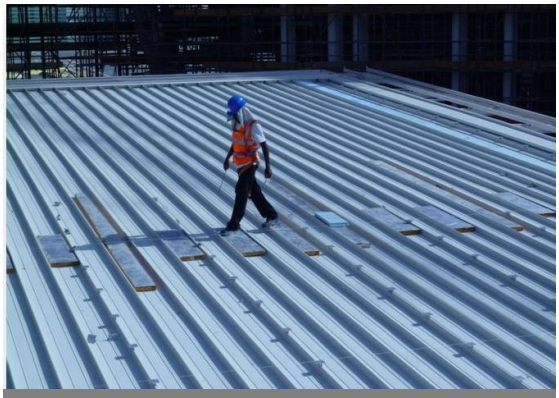
Type 4 Aluminum Clips

- The values given are not standard values and are given only as guidelines. The client to consult TPI depending on project specifications.
- Clip fixing shall be directly to the trapezoidal liner profile with min. thickness of 0.70mm. Four bulb-tite rivets to be used.
- The clip spacing must not exceed half the supporting width of the trapezoidal steel deck.

T-Seam® Type	Sheet Thickness (mm)	Imposed Load kN/m²			Wind Suction					
					Building Heights					
					0-8m		8-20m		>20m	
		0.75	1.00	1.25	EA*	CA*	EA*	CA*	EA*	CA*
65/333	0.80	2.45	2.35	2.00	2.20	1.65	2.00	1.10	1.50	0.80
	0.90	3.15	2.45	2.00	2.75	1.75	2.00	1.10	1.50	0.80
	1.00	3.25	2.45	2.10	3.10	1.75	2.00	1.10	1.50	0.80
	1.20	3.25	2.45	2.25	3.25	1.75	2.00	1.10	1.50	0.80
65/400	0.80	2.45	2.25	1.95	2.00	1.45	1.65	0.90	1.20	0.70
	0.90	2.90	2.45	1.95	2.60	1.75	1.65	0.90	1.20	0.70
	1.00	3.25	2.45	1.95	2.70	1.75	1.65	0.90	1.20	0.70
	1.20	3.25	2.45	1.95	2.70	1.75	1.65	0.90	1.20	0.70
65/500	0.80	2.15	1.85	1.80	1.60	1.05	1.20	0.70	0.90	0.50
	0.90	2.60	2.25	1.80	2.20	1.35	1.20	0.70	0.90	0.50
	1.00	3.00	2.25	1.80	2.30	1.35	1.20	0.70	0.90	0.50
	1.20	3.00	2.25	1.80	2.30	1.35	1.20	0.70	0.90	0.50



Project	Client	Area
Emirates Aluminum Company (EMAL), Abu Dhabi (UAE)	Emirates Aluminum Company (EMAL)	400,000 sqm
Cargo Mega Terminal Building at Dubai Intl. Airport Expansion Phase – II , Dubai (UAE)	Dubai Civil Aviation	45,000 sqm
Sheikh Saeed Halls at Dubai World Trade Centre , Dubai (UAE)	Dubai World Trade Centre	43,000 sqm
Zabeel Hall at Dubai World Trade Centre	Dubai World Trade Centre	20,000 sqm
Unilever, Sri Lanka	Mammut Building Systems	13,800sqm
Al Ain University (UAE)	Mubadala	12,000 Sqm
College of Business Studies – Girls Campus, Kuwait (Kuwait)	Public Authority for Applied Education & Training	11,000 sqm
Shopping Mall at Al Barsha, Dubai (UAE)	Union Co-operative Society	10,000 Sqm
Sports Hall, Fujairah (UAE)	Government of Sharjah	10,000 sqm
MW-AF-315-2007, Air Craft Hangar (UAE)	Directorate of Military Works, UAE Armed Forces	8,100 sqm
Sports Centre at Qabas School, Dibba El Hisen (UAE)	Government of Sharjah	5,700 sqm
Al Reem Island Development, Abu Dhabi (UAE)	Hoesch Contecna Middle East	5,500 sqm
Victoria International School, Sharjah (UAE)	Government of Sharjah	5,000 sqm
Gulf University for Science and Technology , Kuwait (Kuwait)	Public Authority for Applied Education & Training	4,000 sqm
Ice Skating Rink, India	Pine & Peak Developers Ltd	3,600 sqm
Masdar Development, Abu Dhabi (UAE)	Alb me LLC	3,100 sqm
Gymnasium at Al Batheen Palace, Abu Dhabi (UAE)	ALGECO	3,000 sqm
Sports Hall , Khorfakkan (UAE)	Sharjah University	2,820sqm
Al Dhafra Air Base (UAE)	Directorate of Military works, U.A.E Armed Forces	2,500 sqm
Global Pavilion, Dubai (UAE)	Global Village	1,700 sqm
Construction of Building & Jetty for Special Operation HQ , Abu Dhabi (UAE)	Directorate of Military Works, U.A.E. Armed Forces	1100 sqm
Al Jawahara Centre, Manama (Bahrain)	Arabian Gulf University	800 sqm
New Health & Environment Building at CERT, Abu Dhabi (UAE)	Higher colleges of Technology – Abu Dhabi	350 sqm
Nad El Sheba , Dubai (UAE)	Engineer's Office	250 sqm



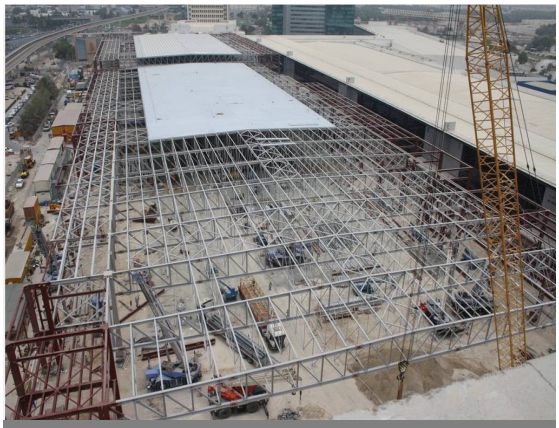
Walkway - Safe & Easy Accessibility

Safety Harness

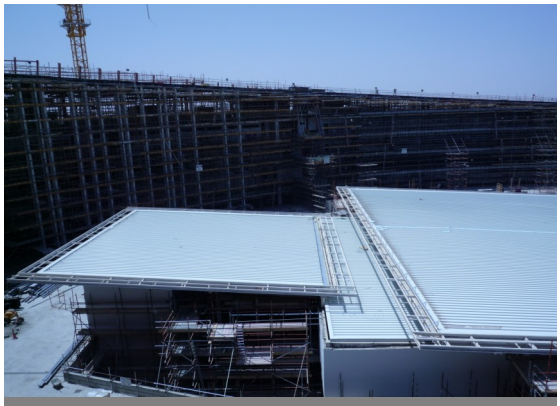
Clips

Clamp

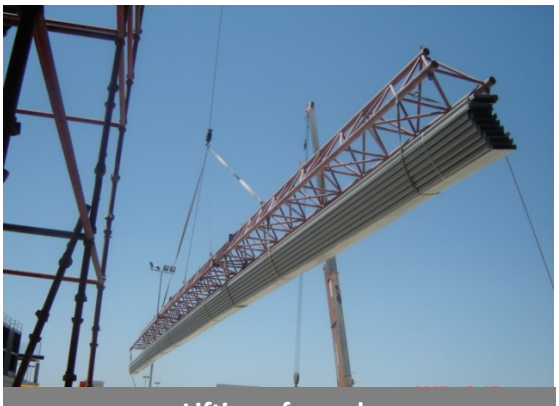
Installation in Progress



Installation in Progress

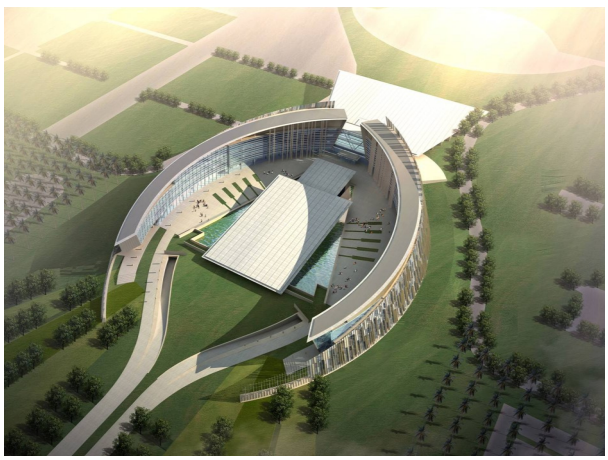


Installation in Progress



Lifting of panels


LIEBHERR



ACCREDITATION

Tiger Profiles & Insulation's, T-Seam® has been recognized for its superior and advanced features, functionality and durability. T-Seam® – the prestigious, environmentally friendly and superior standing seam roofing system by Tiger Profiles & Insulation has received the highly regarded FM Approvals that now certify T-Seam® as one of the leading standing seam roof systems in the international market.

This certification is combined with T-Seam® approvals from the DIBT – Deutsche Institute for BauTechnik (German Institute for Building Technology) and by Dubai Civil Defense Approvals (UAE) as well as Dubai Municipality (UAE) received by T-Seam® as a building system.


Certification made simple™

Certificate of Registration

Presented to

Tiger Profiles & Insulation LLC

(ISO Certified Company)

Management Standard Certifications:

ISO 9001:2008 Quality Management Systems

Legal Status:	Limited Liability Company
Certificate ID:	AE-10-100560
Registration Term:	10 years (Subject to Annual Audit)
Certificate valid from:	1st December 2009
Certificate valid to:	30th November 2010
Main SIC Code:	4534
Scope of Certification:	Manufacturing, EPC & Supply of Roof & Wall Cladding, Floor Decking, T-Seam®, Profile Sheets, Z-Purlins, C-Channels, Fasteners & Other Sections, Insulated Composite Panels For Constructional, Cold Stores & HVAC Purposes & Related Accessories

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ISO 14001:2004 Environmental Management Systems

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(ISO Certified Company)

Management Standard Certifications:

OHSAS 18001:2007 Health & Safety Management Systems

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GOVERNMENT OF DUBAI — DUBAI MUNICIPALITY

FAX MESSAGE — رسالة بالفاكس

TO :	
CITY:	FAX NO : 06-5336673
COUNTRY :	NO OF PAGES : 1
FROM :	

الموضوع	اعتماد نظام عازل حراري للأسطح (T-Seam Roofing System)
الشركة	تايجر للمقاطع والعوازل

وتفضلوا بقبول فائق الاحترام والتقدير،،،


DEUTSCHES INSTITUT FÜR BAUTECHNIK

Anstalt des öffentlichen Rechts

Allgemeine bauaufsichtliche Zulassung

Zulassungsnummer:	Z-14.1-543
Antragsteller:	Zeman Bauelemente Produktionsgesellschaft m.b.H. St. Lorenzen 39 5811 SCHEIFLING ÖSTERREICH TIGER PROFILES & INSULATION L.L.C. PO Box 23489 SHARJAH Vereinigte Arabische Emirate Blocoteiha Coberturas Metalicas Autoportantes LDA. Apartado 30 2481 PORTO DE MOS PORTUGAL
Zulassungsgegenstand:	Stehfalzprofil-Dachelemente aus Aluminium
Geltungsdauer bis:	30. September 2012

Der oben genannte Zulassungsgegenstand wird hiermit allgemein bauaufsichtlich zugelassen.
Diese allgemeine bauaufsichtliche Zulassung umfasst neun Seiten und neun Anlagen.


FM APPROVED

Certificate of Compliance

This certificate is issued for the following:

TIGER PROFILES T-SEAM® STANDING SEAM ROOF ASSSEMBLY AS CLASS 1 PANEL ROOFS

Prepared for:

Tiger Profiles & Insulations, LLC
PO Box 23489
Sharjah Industrial Area-2
Sharjah
United Arab Emirates

FM Approvals Class: 4471

Approval Identification: 3030503 Approval Granted: October 16, 2009

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

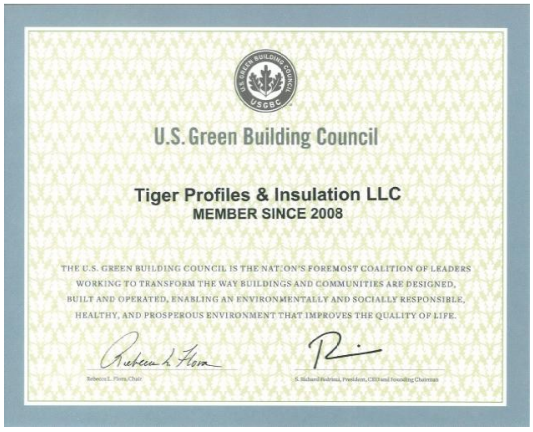
For more than 160 years FM Approvals has partnered with business and industry to reduce property losses.

FM Approvals

Member of the FM Global Group

Richard P. Perron, P.E.
Asst. Vice President, Group Manager
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062

March 15, 2010


U.S. Green Building Council

Tiger Profiles & Insulation LLC
MEMBER SINCE 2008

THE U.S. GREEN BUILDING COUNCIL IS THE NATION'S FOREMOST COALITION OF LEADERS WORKING TO TRANSFORM THE WAY BUILDINGS AND COMMUNITIES ARE DESIGNED, BUILT AND OPERATED, ENABLING AN ENVIRONMENTALLY AND SOCIALLY RESPONSIBLE, HEALTHY, AND PROSPEROUS ENVIRONMENT THAT IMPROVES THE QUALITY OF LIFE.

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