

Hi-Gal Sheds verses traditional options

This Smart iNFO sheet describes the differences between two of the most common types of sheds built in the UAE region and Dependable Steel Hi-Gal structures manufactured from light gage high tensile steel.

Definitions	
CHS	Circular Hollow Section. (round tube)
Cladding	Refers to any material used to enclose a structure and would include materials such as wood, fibre cement, steel or aluminium. Cladding includes both roof and wall coverings.
Cold Rolled/Formed	A manufacturing technique where thinner steel is passing through rollers at ambient temperatures to reduce the gage or impart shape to form various structural members or profiled sheets.
COLORBOND®	A pre painted steel with ZINCAULME® base material.
Electro Galvanizing	A method used to deposit thin layers of zinc on steel to protect it from corrosion.
Hot Dipped Galvanized	A method whereby steel is dipped in molten zinc to form thick layers of zinc which bond with the steel to protect it from corrosion.
Hot Rolled Steel	A manufacturing technique where steel is heated to high temperatures and passed between rollers to impart the shape. Commonly used to manufacture steel I and H beams.
Galvanizing	A system whereby zinc is used to coat steel to protect it from corrosion. The zinc can be deposited chemically using electrolysis or by dipping steel in a in a molten zinc bath. Other methods include spraying, and cold galvanizing with zinc rich paints. The zinc acts in sacrificial manner via galvanic action to protect the steel.
Portal Frame	Frames used in low-rise structures, comprising columns and horizontal or pitched rafters, connected by moment-resisting connections.
PPGI	Pre painted galvanized steel
RHS	Rectangular Hollow Section (rectangular tube)
Sandwich panel	An insulated panel consisting of an expanded foam material sandwiched between a profiled steel or aluminium top sheet, and lower steel or aluminium sheeting or foil craft paper.
Secondary structural members	In a portal framed building refers to the purlins which connect the rafters and support the roof sheets, and the girts which connect the columns and support the wall sheets.
SHS	Square hollow section (square tube)
Tensile strength	Tensile strength is the capacity of a material or structure to withstand loads tending to elongate the material.
ZINCALUME®	At metallic coating alloy of Zinc and Aluminium used to protect steel from corrosion.

Why Hi-Gal is the preferred option for small to medium sized structures.

Comparison table

	Traditional Hot Rolled Portal Framed Structures	Low Tech Welded Structures	Dependable Steel Hi-Gal Cold Formed Portal Framed Structures
Description and use	<p>Medium to large industrial buildings constructed from hot rolled columns and rafters.</p> <p>The most common method used to manufacture medium to large buildings in the UAE and surrounding region.</p> <p>Used to construct a wide range of medium to large industrial buildings and sheds.</p>	<p>Medium to small structures manufactured in small fabrication workshops manufactured by welding hollow sections to form trusses and columns. Columns are often single CHS or SHS sections.</p> <p>Used as Car Ports, Car Shades, Sheds, and Shelters.</p>	<p>Small to medium portal framed structures manufactured from high tensile galvanized steel profiles which are held together using brackets and bolted connections.</p> <p>Used as Farm Sheds, Small to Medium Industrial Sheds, Storage Sheds, Car Ports, Shelters, Barns, Garages, and mixed use buildings.</p>
Frames Primary members (columns and rafters)	Portal frames manufactured from heavy hot rolled steel beams which are painted.	Round or square tube welded together and may incorporate steel angle to form braces and cleats. Commonly non galvanized material which is painted.	Portal frames manufactured from light weight high tensile galvanized steel members which are bolted together via connecting brackets.
Frames secondary members	Manufactured from galvanized steel.	Non galvanized steel angle, or hollow section which is painted.	Manufactured from light weight high tensile galvanized steel.
Cladding	Quality can vary but often low quality PPGI or Aluminium. The low tensile strength material dents easily and poor quality paints fade quickly resulting in a white chalk like appearance.	Usually the cheapest PPGI or Aluminium profile available sourced in the local market.	COLORBOND® or ZINCALUME® which is proven to outlast PPGI by 4-6 times. See www.COLORBOND.com for details. The high tensile strength (nominal 550MPa) is highly resistant to denting, and the high quality paints resist fading and chalking.
Insulation	Sandwich panel most commonly used on the roof. Depending on origin may contain banned ozone depleting substances. The walls are often not insulated. OR built up insulation systems in larger structures.	If included usually sandwich panel of unknown origin.	SUNSTOP reflective insulation used on the roof and walls.
Walls	The bulk of the wall is often concrete blocks which are rendered and painted. The rendering process is very time consuming. Rising damp causes staining and failure of the paint in the lower part of the wall soon after construction. Walls need regular repainting every year or so. The cost of these	Single skin PPGI, sandwich panel, or open sides.	The full length of the wall is clad with COLORBOND® or ZINCALUME®. This is much faster to construct when compared to block work rendering and painting, and is virtually maintenance free. Block work is available if requested.

	walls is not usually included in the quote		
Fasteners	Quality can vary, but often electro galvanized fasteners are used. Electro galvanized fasteners are not suitable for use in the UAE.	The cheapest fasteners purchased in local souks and bazars of unknown tensile strength. Electro galvanized with minimal coatings.	Structural bolts are grade 8.8 and hot dipped galvanized. Screws are mechanically galvanized to Australian Class 4 standard (1000hr salt spray resistant)
Design and planning	Each building manually designed using generic software solutions such as TEKLA, engineered and detailed individually. This is inefficient and cost prohibitive for small structures as the planning and design represents a high proportion of the overall costs.	Design based on experience of manufacturer, and not properly engineered.	Usually uses software which does the engineering and detailing, and produces all of the associated drawings, bills of materials and so on. This translates to a building being designed in minutes as opposed to days of weeks using traditional manual methods. This keeps planning costs reasonable in relation to the cost of the structure.
Cost	Most economical for buildings with spans of 20m and above, becoming more uneconomical as the buildings get smaller. Uneconomical for buildings with spans below 15m.	Low cost.	Economical for buildings with spans of less than 20m. Becomes uneconomical as spans increase above 20m. Is very economical with spans below 15m.
What's included in the quote	Often just the frame and a roof without the complete walls, and associated doors and windows which can be a significant portion of the price especially for smaller buildings.	Inconsistent and unreliable.	A complete kit with everything is included down to the last nut and washer.
Quality	Varies depending upon the manufacturer and materials chosen	Poor	High
Construction time	Long	Fast	Fast
Environmental	Varies depending on the manufacturer. The origin of the steel is often untraceable thus the recyclable content and manufacturing techniques are not known and therefore cannot usually qualify under any environmental schemes such as LEED or BREEAM.	No consideration for environmental impact. And source of materials untraceable.	Structural and cladding members are sourced from quality manufacturers with full traceability and thus may qualify for environmental relief based on the use of recycled content and other factors.
Span capability	Large spans possible	Spans limited to around 20m	Clear spans of up to 30m, but most economical at 20m and below.
On column cranes	Can support on column cranes.	Cannot support on column cranes. Gantry cranes can be used instead.	Cannot support on column cranes. Gantry cranes can be used instead.
Foundations	Bulky, complex, labour intensive foundations required to support the high weight of the structure.	Simple light integrated footings and slab, or isolated piers below each column thanks to the low weight of the structure.	Simple light integrated footings and slab, or isolated piers below each column thanks to the low weight of the structure.
Seismic	Can be designed to resist	No	Can be designed to resist

	seismic forces.		seismic forces.
Wind speeds	Can be designed to resist high wind speeds as specified.	Unknown and unpredictable.	Can be designed to resist up to cyclonic wind speeds as specified.
Installation of MEP	Post installation if block work walls have been used. Internal cable trays often required to support cables.	Additional supports including cable trays required to support pipes and cables.	Very easy pre and post construction as pipes and cables can be passed through the cladding walls with ease. The frames are manufactured from open profiles which can act as cable trays.
Maintenance	Regular repainting of block work walls usually required.	Regular re painting and treatment of non galvanized frames required.	Low maintenance with occasional washing with fresh water recommended.
Maximum heights	Very large heights achievable.	Typically 4m maximum outside eave height.	Typically 5m maximum outside eave height.
Life span	Usually high, but depends on the quality of the materials.	Low, appearance deteriorates within months, and potential structural failure within a few years.	Long life span as frames are fully galvanized, and high quality COLORBOND® or ZINCALUME® cladding used.
Engineering	Full engineered and well founded technology.	None	Fully engineered and well founded technology.
Use and acceptance of technology	A well founded technology which is widely used and accepted.	Commonly used due to low price.	Well founded technology and is the most common method used to construct small to medium sheds and similar structures in Australia with tens of thousands of buildings being constructed annually. The technology is also popular in Malaysia, Thailand and Vietnam.
Codes and standards	Well developed codes and standards exist in most countries.	Buildings are not designed to any code.	Well developed codes and standards in developed countries such as Australia/NZ, the USA, and UK. Less so in other countries.

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Summary of benefits offered by Hi-Gal sheds.

- ★ **High Quality**
- ★ **Low Cost**
- ★ **Fast Manufacture**
- ★ **Lower shipping costs**
- ★ **Long life**
- ★ **High Strength**

For more info on Hi-Gal sheds see our website or contact your nearest sales office.