



## LGS DIVISION

PRESENTATION  
VERSION- 1.8/2014

# LIGHT GAUGE STEEL BUILDING SYSTEM



## INTRODUCTION

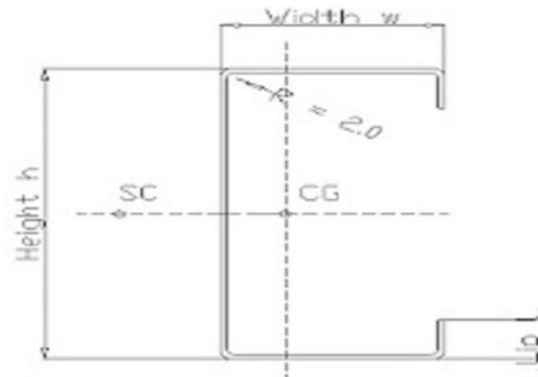
Light gauge steel building is a viable alternative to conventional building materials used in residential, light commercial and mid-rise construction, helping to preserve natural resources. Light gauge steel sections are increasingly being used as primary structural members, such as beams, floor joists, and columns, or as load-bearing walls or partitions in commercial and residential construction. However, light gauge steel can be used much more efficiently if it is done in a panelized environment using intelligent roll-forming machines with advanced technology and sophisticated design and factory software packages.

Steel-framed structures (such as labor accommodations and villas) are built using light gauge steel shapes. The walls and floors consist of shapes arranged at a spacing of typically 400 or 600 mm on centre, to which structural cladding (such as pre-painted steel sheets, plywood, cement board, gypsum board, or the like) is attached with screws. The light gauge structure and the face materials (pre-painted steel sheets, plywood, cement board, gypsum board, etc.) demonstrate its structural strength and fire resistance. Shielding by gypsum board or cement board and the like ensures a fire rating up to 2 hours without fire protection of the steel members themselves.



# LGS Profile

Lipped Cee Section Properties

Name		S8955	S8975	S8995	S8912	S8916
Grade		G550	G550	G550	G550	G350
Coating		AZ150	AZ150	AZ150	AZ150	AZ150
Yield Stress $f_y$	MPa	410	495	500	500	350
Tensile Stress $f_u$	MPa	410	495	520	520	420
Height $h$	mm	89	89	89	89	89
Width $w$	mm	41	41	41	41	41
Thickness $t$	mm	0.55	0.75	0.95	1.15	1.55
Lip $l$	mm	12	12	12	12	12
Feed	mm	189	188	187	186	184
Area	mm <sup>2</sup>	103.89	140.94	177.60	213.88	285.26
Mass	Kg/m	0.816	1.106	1.394	1.679	2.239
Second Moment of Area $I_x$	mm <sup>4</sup>	133599	180244	225869	270484	356720
Second Moment of Area $I_y$	mm <sup>4</sup>	25300	33906	42203	50197	65291
Radius of Gyration $r_x$	mm	35.86	35.76	35.66	35.56	35.36
Radius of Gyration $r_y$	mm	15.61	15.51	15.42	15.32	15.13
Centroid Position $x$	mm	13.27	13.16	13.06	12.96	12.76
Centroid Position $y$	mm	44.23	44.13	44.03	43.93	43.73
Shear Centre $x_0$	mm	33.40	33.18	32.95	32.73	32.28
Shear Centre $y_0$	mm	0	0	0	0	0
Polar Radius of Gyration $r_{o1}$	mm	51.61	51.38	51.15	50.91	50.45
Torsion constant	mm <sup>4</sup>	10.48	26.43	53.43	94.28	228.44
Warping Constant $I_w$	mm <sup>6</sup>	45533782	60738417	75251577	89091827	114826156
Section Modulus $Z_x$	mm <sup>3</sup>	3002	4050	5076	6078	8016
Section Modulus $Z_y$	mm <sup>3</sup>	921.34	1235	1537	1828	2377



# LGS Machine Specifications

OUTPUT FEATURE	BENEFIT
High output (depends on design)	400 - 750m/hr (1300 – 2,460ft/hr) providing output for high volume operations.
Component length and Punching accuracy ( $\pm 0.5\text{mm}$ or $1/32''$ )	Accuracy in assembly of panels, trusses and onsite construction while minimising waste.
Fastening holes pre-punched	Quick, easy and accurate assembly, minimising labour costs.
Fastening holes dimpled	Screws lie flush with stud surface and dimples assist in eliminating the need for jig assembly tables.
Swaged ends	Studs sit precisely in the track, achieving full load transfer for multi-level buildings and modular structures providing strength and reliability.
Notched lips	Easy to fit studs within track.
Punched web holes	Studs pass through horizontal blocking.
Service holes punched	Ready for electrical and plumbing installation.
Bolt holes punched	Ready for hold down bolts.
End chamfer cut	For faster assembly and higher quality trusses and joists
Individually labelled components	Clear and concise assembly, no guess work, ideal for kitset building.
PROFILES	
Produce standard or boxable C profile	
	Plus a U profile 

# LGS BUILDING TYPES

Residential



Labor Accommodation



Multi Storied Building



Ware Houses



Porta Cabins



Low Cost Houses



# RESIDENTIAL

Villas, Residential buildings, Flats, Modern homes etc..



# INDUSTRIAL

Factories, laboratories, offices, rest stops, warehouses, bus stations, constructions companies, covered storage for industrial waste and do-it-yourself retail locations.



## COMMERCIAL/RETAIL

equestrian, equipment leasing companies, livestock and breeding, maintenance facilities, market places/bazaars, museums, residential common areas, self-storage facilities, stores/storefronts, gas stations, telecommunication infrastructure coverage, vehicle dealerships and warehouses.



# PUBLIC WORKS

Administrative buildings, dormitories, guardrails, machine shops, pumping stations and other containment facilities.



# INSTITUTIONAL

Airport facilities: maintenance facilities, baggage handling and storage, personnel processing, churches, day care centres, drug treatment facilities, elder care communities, medical centres/hospitals, meeting halls, prisons, reception, rest stops, gymnasiums, roadside storage, schools and tunnel lining.



# MILITARY

Barracks and dormitories, base construction and reconstruction, equipment maintenance and repair workshops, stores and warehouses, border posts, Office units, Kitchen facilities, Accommodation units, Car Parking, ammunition storage, prepositioning for emergency response, sport facilities, supply depots, simulator and training buildings.



# HUMANITARIAN AID

Clinics, disaster relief: shelters (processing, relief supplies, personnel and food distribution), storage, operational headquarters, reconstructive efforts; food distribution locales, dining and sanitary facilities, maintenance and communication hubs, homeless shelters, low-income housing and base camp facilities.



# RESIDENTIAL

Dormitories, Villas, Multi Story Buildings, Flats



# PUBLIC

Major global companies: housing for their workforce, hydroelectric projects, offices, oil and gas refineries, storage for equipment, support facilities



## RECREATIONAL

Amusement park shelters, camping facilities, enclosed sport facilities; batting ranges, bowling alleys, fitness centres, historic landmarks/tourist shelters, vacation homes.



# GOVERNMENTAL

Custom facilities, free trade zones, facilities for maritime agencies and port authorities.



# LGS Building Cladding

There are many ways to finish LGS walls, common type are the following,

- Cement Board
- Gypsum Board
- Stone Cladding
- Wood Panel
- Pre Painted GI sheet
- Sandwich Panels
- Light Weight Concrete Panels.

# LGS Building Insulation

Following are the main type of heat insulation method used in LGS buildings,

- PU Insulation
- Rock Wool Insulation.
- Foam Concrete method.
- Glass Wool Insulation
- Cellulose Insulation.



**MORE PHOTOS**





**RESIDENTIAL**





**INDUSTRIAL**





## SHOPS





# CAMPS





**END OF PRESENTATION**

