

**ZINCALUME® BRAND** 

Lausa-1 Bansgadi, Rupandehi / Kathmandu Contact Office: Bhaisepati Lalitpur-25, Nepal 977-9851081715 / 977-9857077503 www.itsss.com.np

# **Fabrication Process**

#### STEP 1

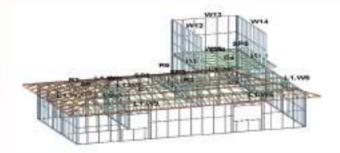
Designing and Analysis of LGFS Building in computer.

#### STEP 2

Loading of Steel to the decoiler

#### STEP 3

Copy the design in the Smart machine for roll forming into C-channels and Hat Sections.







C-Channel- 90mm profile



Hat section- 2" profile

#### STEP 4

The machine cold rolls the steel and form C-channels and Hat – Section of required length.

#### STEP 5

C- channels are assembled to form wall panels, roof support

#### STEP 6

Hat Sections are assembled to make floor joist and roof trusses







**Roof Truss** 



### **About ITSSS**

I.T. Steel Structure Solutions Pvt. Ltd. (ITSSS) is owned and run by highly skilled women professionals. It is an Engineering based steel fabrication company. It provides affordable as well as premium housing solutions for residential and commercial buildings. The proficient team of ITSSS provides services in fabrication, erection and installation of such houses. As a key highlight the company proudly serves as the Local Partner of Tata Bluesope Steel Pvt.Ltd.

The material used for these structures is G550 AZ150 non alloy steel coil with minimum 150 gsm Zincalume coating from ZINCALUME R brand of TATA Bluescope Pvt. Ltd. It is in compliance with international standard of AS1397/IS15961. The company uses sophisticated Computer Aided Design (CAD) software to design and analyze steel structures for any housing projects. The approved design is fed into intelligent and ultra-modern machinery equipment which cold rolls and cut the required sections with precision. This helps in faster, cheaper and simpler assembly of steel structures as such wall frames, roof trusses, roof panel and floor joist. Furthermore, the company also fabricates other steel structures using mild steel such as structural beams, columns, steel trusses and foundation bolts required for steel structures.

# What is Light Gauge Framing System (LGFS)?

Light Gauge Framing System (LGFS) is a modern construction technology using cold-rolled

### Mission

Our mission is to provide economical steel structure housing solutions of international standards using Smart Technology and Intelligent machines for all purposes of housing construction.

#### Vision

To become leading Fabricator of Steel Structure Solutions for residential, rural, communal and commercial buildings.

steel as the construction material. It can be used for roof systems, floor systems, wall systems, roof panels, decks or the entire buildings.

#### Services we offer:

All the Engineering services (designing, analysis, fabricating, erecting and installing steel members) pertaining to the LGS and Structural Steel are performed by us. This includes premium residential homes & light commercial buildings, rural budgeted homes and school buildings. We also collaborate with our international partner for complex designs and structures.



#### Information on ZINCALUME®

ITSSS is the only Company of Nepal to make use of world -class high quality Zincalume® brand Light Gauge Steel (LGS) having high tensile strength to construct steel structures. ZINCALUME® STEEL is a proprietary brand of coated steel developed by BlueScope, an Australian steel manufacturer. It is well-known for its high-performance corrosion resistance and durability due to its unique metallic coating, which typically consists of 55% aluminum, 43.5% zinc, and 1.5% silicon. This combination offers: Corrosion resistance: Ideal for LGFS, roofing, wall cladding, and structural applications.

Heat reflectivity: Helps in maintaining cooler interiors in buildings.

Durability: Longer lifespan compared to standard galvanized Steel

### ZINCALUME® के हो ?

ITSSS नेपालको एक मात्र विश्व-स्तरीय उच्च-गुणस्तर का उच्च तन्य शक्ति (High Tensile Strength) भएको **ZINCALUME® ब्रान्डको लाइट गेज स्टिल (LGS)** प्रयोग गरि मजबुत स्टिल संरचनाहरूको निर्माण गर्ने कम्पनी हो।

ZINCALUME® स्टिल ब्लूस्कोप (BlueScope) नामक अष्ट्रेलियन स्टिल उत्पादक कम्पनीद्वारा विकसित गरिएको विशेष कोटेड स्टिल ब्रान्ड हो । यसको अद्वितीय धातु कोटिंग (Metallic Coating) को कारणले गर्दा, यो उच्च-प्रदर्शनकारी खिया प्रतिरोधी (Corrosion Resistant) र टिकाउ (Durable) मानिन्छ । यसमा ४५% एल्युमिनियम, ४३.५% जिंक, र १.५% सिलिकन को मिश्रण रहेको हुन्छ, जसले यसलाई अभ बढी टिकाउ बनाउँछ ।

जंग प्रतिरोध: - LGFS का घरका संरचनाहरू छाना, भित्ताको क्ल्याडिङको लागि उपयुक्त हुन्छ भने यो कठोर वातावरणमा पनि टिकाउ हुन्छ ।

ताप परावर्तक क्षमता: - यसले ताप कम अवशोषण गर्ने भएकोले यसले भवनको भित्री तापक्रम स्थिर राख्न मद्दत गरि विजुलीको पनि बचत गर्दछ।

### Why construct in LGFS?

### Because this technology is:

- A Smart and Sustainable Steel Building Technology
- Rust Resistant light Structure with high tensile steel
- Earthquake Resistant
- Pre-Engineered
- Fire Resistant
- Well Insulated
- Fast and Eco Build
- Easy Transport

## एलजीएफएस (LGFS) मा निर्माण किन गर्ने ?

### किनभने यो प्रविधि:

- 🔫 एक स्मार्ट र दिगो इस्पात भवन प्रविधि
- 🔫 खिया प्रतिरोधी संरचना, उच्च तन्य इस्पात
- \tau भुकम्प प्रतिरोधी
- ๆ पुर्व-इन्जिनियर गरिएको
- 🧻 अग्नि प्रतिरोधी
- 🚽 राम्ररी इन्स्लेट गरिएको
- 🤊 छिटो र पर्यावरणमैत्री निर्माण
- 🔻 सजिलो ढुवानी

दिगोपन: - साधारण ग्याल्भेनाइज्ड स्टिलभन्दा बढी टिकाउ हुनाले कम मर्मत खर्च लाग्ने

यो आवासीय तथा व्यावसायिक निर्माण परियोजना हरूको लागि उत्तम विकल्प हो।



# आई.ठी. स्ठील स्ट्रक्चर सोलुसन्स प्रा. लि.

## (ITSSS) को बारेमा

I.T. Steel Structure Solutions Pvt. Ltd. (ITSSS) दक्ष महिला द्वारा सञ्चालित इन्जिनियरिङमा-आधारित स्टिल निर्माण कम्पनी हो । यो कम्पनीले उच्च गुणस्तरका आवासीय र व्यवसायिक भवनहरु सुलभ दरमा निर्माण गर्दछ । ITSSS को कुशल टोलीले स्टीलका घरहरुको डिजाइन, फेब्रिकेसन र जडान गर्ने जस्ता कार्यहरु गर्दछ । ITSSS TATA Bluescope Steel Pvt. Ltd. को स्थानिय साभेदार को रुपमा कार्य पनि

यी स्टिल संरचनाहरू निर्माण गर्न Zincalume coating 150 gsm को (G55 AZ150) non alloy steel coil प्रयोग गरिन्छ । ZINCALUME® ब्राण्ड ITSSS TATA Bluescope Steel Pvt. Ltd. ले उत्पादन गर्दछ जसको अन्तराष्ट्रिय मापदण्ड AS1397/IS15961 रहेको छ । कम्पनीले कुनै पनि आवास परियोजनाको लागि स्टिल संर चनाहरू डिजाइन र विश्लेषण गर्न अत्याधुनिक कम्प्युटर एडेड डिजाइन (CAD) सफ्टवेयर प्रयोग गर्दछ । अनुमोदित डिजाइनलाई स्मार्ट र अत्याधुनिक मेसिनरी उपकरणमा प्रविष्ट गरिन्छ, जसले आवश्यक भागहरूलाई चिसो रोल गरेर उच्च सटीकताका साथ काटछ ।

यसले पर्खाल फ्रेम, छत ट्रस, छत प्यानल र फ्लोर जोइस्ट जस्ता स्टिल संरचनाहरूको छिटो, सस्तो र सरल संयोजन गर्न मद्दत गर्छ । साथै, कम्पनीले संरचनात्मक बीम, स्तम्भ, स्टिल ट्रस र स्टिल संरचनाहरूको लागि आवश्यक फाउन्डेशन बोल्टहरू जस्ता अन्य स्टिल संरचनाहरू पनि माइल्ड स्टिल प्रयोग गरेर निर्माण गर्दछ।

### उद्देश्य

हाम्रो मिशन भनेको स्मार्ट प्रविधि र बौद्धिक मेसिनहरू प्रयोग गरेर अन्तर्राष्ट्रिय मापदण्डका किफायती हल्का इस्पात संरचना निर्माण गरि आवासिय समाधानहरू उपलब्ध गराउनु हो।

### परिकल्पना

आवासीय, ग्रामीण, सामुदायिक र व्यावसायिक भवनहरूका लागि इस्पात संरचना समाधानको अग्रणी निर्माता बन्नु ।

### लाइट ोज फ्रेमिङ प्रणाली (LGFS) के हो?

लाइट गेज फ्रोमिङ प्रणाली (LGFS) एक अत्याधुनिक निर्माण प्रविधि हो, जसमा निर्माण सामग्रीको रूपमा कोल्ड-फर्म्ड स्टील प्रयोग गरिन्छ । यसलाई छाना प्रणाली, भुइँ प्रणाली, भित्ता प्रणाली, छाना प्यानल, डेक वा पुरै भवन निर्माणका लागि प्रयोग गर्न सिकन्छ ।

### हामा सेवाहरू

हामी एलजीएस (LGS) र संरचनात्मक इस्पात (Structural Steel) सम्बन्धी सबै इन्जिनियरिङ सेवाहरू (डिजाइन, विश्लेषण, निर्माण, ईरेक्सन र ईन्सटलेसन) प्रदान गर्छौ । यसमा उच्चस्तरीय आवासीय घरहरू र हल्का व्यावसायिक भवनहरू, ग्रामीण सुलभ मुल्यमा घरहरू र विद्यालय भवनहरू समावेश छन् । जिटल डिजाइन र संरचनाहरूको लागि हामी हाम्रो अन्तर्राष्ट्रिय साभेदारसँग पनि सहकार्य गर्छौं।

# **Our Accomplished Projects**

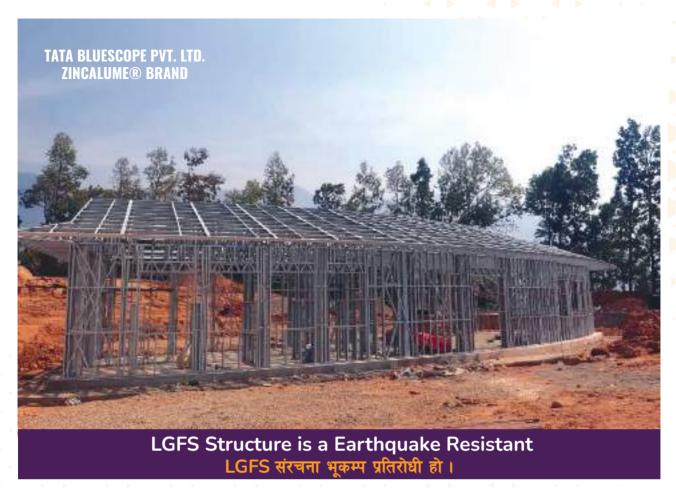
ITSSS Company take pride in the diverse portfolio of successfully completed projects, showcasing their expertise, innovation, and commitment to excellence.

### 1. Corporate Office Building

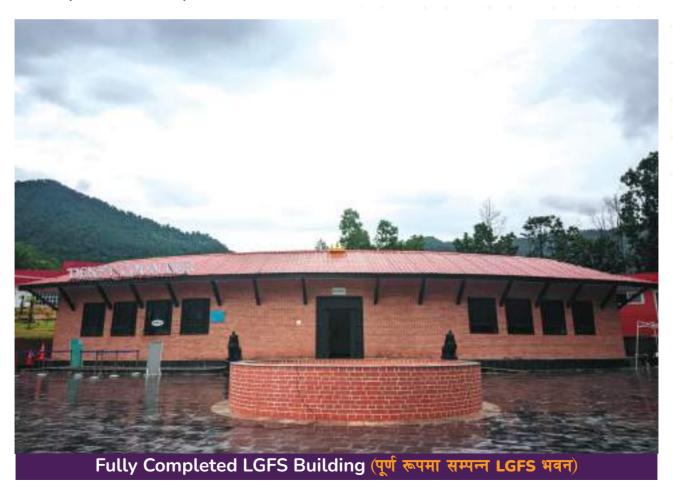


Builtup Area: 3500 sq.ft / Site: Siddhartha Cable Car Ltd, / Deurali Danda, Butwal -1





Builtup Area: 1805 sq.ft / Site: Siddhartha Cable Car Ltd, / Deurali Danda, Butwal -1



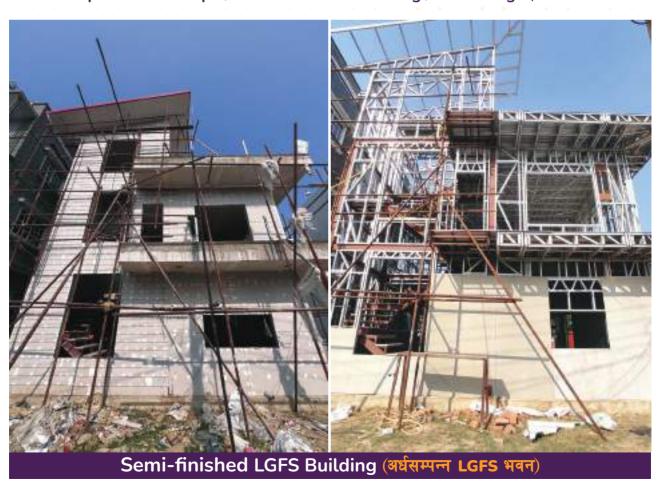


Builtup Area: 1237 sq.ft / Site: Siddhartha Cable Car Ltd, / Deurali Danda, Butwal -1





Builtup Area: 2745 sq.ft / Site: Residential Building / Kalika Nagar, Butwal-11





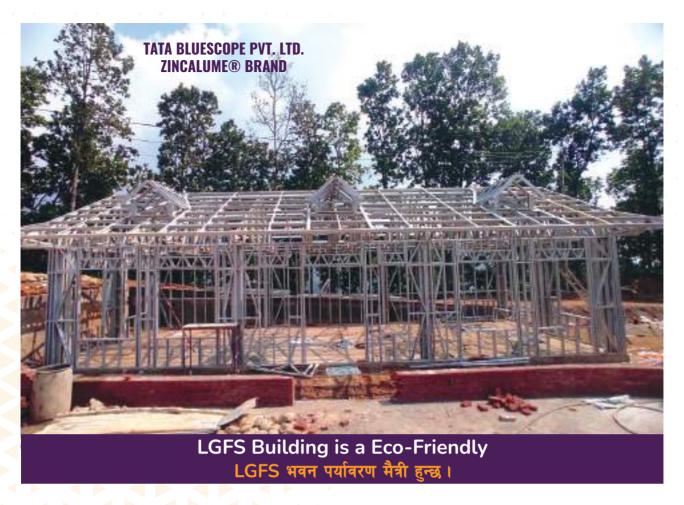
Builtup Area: 2400 sq.ft / Site: Near Ban Batika / Tilottama -3





Builtup Area: 5000 sq.ft / Site: Kanchan-1, Bansgadi, Rupandehi

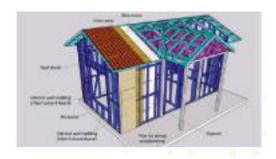




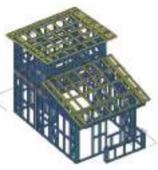
Builtup Area: 968 sq.ft / Site: Siddhartha Cable Car Ltd, / Deurali Danda, Butwal -1



# **Commonly used Construction Material**



# Figure 1



Builtup Area: 249 sq.ft
Loft Home



Loft Home Interior by Ultra Interior

4				
S.No.	Material Description	Thickness	Important Properties	Size
1   1	External/Internal Cladding: Fibre Cement Board	6mm, 8mm, 10mm, 12mm	<ul> <li>Density: &gt;14 50kg/m³</li> <li>Modulus of Rupture &gt;14 at wet condition</li> <li>Impact Resistant,</li> <li>Water, heat and high wind pressure resistant</li> <li>Modulus of Rupture &gt; 18 MPa at EMC</li> </ul>	4'X6' 4'X 8' 4'X 8' 4'X 8'
<b>◄</b> ]	4 > 4	<b>+ + + +</b>	<ul><li>Modulus of Rupture &gt;14 at wet condition</li><li>Impact Resistant,</li></ul>	
2	Flooring Board: Fibre Cement Board	18mm, 22mm	<ul> <li>Same as above:</li> <li>Load bearing capacity: 1000 kg/m²</li> <li>Unplanned point Load &gt; 45 kg</li> </ul>	4'X8' 4'X8'
3	Wall Insulation: Rockwool	50mm 75mm 100mm	<ul> <li>Non-combustible Euroclass A1</li> <li>Ignitibility: 0, Spread of flame: 0 Heat evolved: 0 Smoke developed: 0-1</li> <li>Thermal Conductivity: 0.035 W/mK</li> <li>Water Absorption (partial immersion): 1 kg/m²</li> <li>Water Vapor Absorption &lt; 0.04 Vol %</li> <li>Sound Insulation: 125Hz to 4000Hz</li> </ul>	4'X12'
4	Roofing Insulation: Glasswool	25mm 50mm	<ul><li>Thermal Conductivity: 0.037 W/(m.k)</li><li>Fire Resistant: A1</li></ul>	12m² per roll
5	Roofing Sheet:	0.35mm on wards	<b>→</b> Galvanized MS Sheet	As per need

# Figure 2

S.No.	Material Description	Thickness	Cube Testing Results
1	Wall infill/ Floor Slab/ Roof Slab: Light Cellular Concrete	4"	<ul> <li>Age: 38 days</li> <li>Weight: 1.794 kg</li> <li>Density: 531.56 kg/m³</li> <li>Breaking Load (KN): 41.5</li> <li>Compressive Strength: 1.84 N/mm²</li> <li>Wate Absorption %: 4.30 (A1-A2) /A2*100</li> </ul>



### Material Description of Light Gauge Steel used in ITSSS

### **Test Report of Light Gauge Steel**

#### Thickness: 0.55mm

Sr. Coil Number No.				BASE STEEL MECHANICAL PROPERTIES					METALLIC COATING QUALITY TEST		
	Coil Number	Mother Coil Number	Base Metal Thickness (mm)	Width (mm)	Yield Strength (MPa)	Ultimate Tensile Strength (MPa)	Gauge Length (mm)	Elongation (%)	Hardness (HR30T)	Metallic Coating Adhesion (T-Bend)	Metallic Coating (Triple spot) (g/m2)
1	2406871300	2406871000	0.55	173	691.0	706.0	80	4.31	77	PASS	160
2	2406871100	2406871000	0.55	173	691.0	706.0	80	4.31	77	PASS	160
3	2406871200	2406871000	0.55	173	691.0	706.0	80	4.31	77	PASS	160
4	2406871400	2406871000	0.55	173	691.0	706.0	80	4.31	77	PASS	160
5	2406872700	2406872000	0.55	173	691.0	706.0	80	4.31	77	PASS	160
6	2406872900	2406872000	0.55	173	691.0	706.0	80	4.31	77	PASS	160
7	2406872A00	2406872000	0.55	173	691.0	706.0	80	4.31	77	PASS	160

#### Thickness: 0.75mm

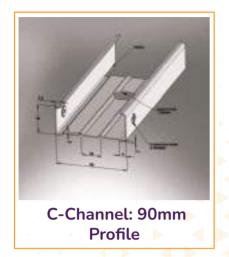
_						BASE STEEL	MECHANI	CAL PROPERT	METALLIC COATING QUALITY TEST		
Sr. No.	Coil Number	Mother Coil Number	Base Metal Thickness (mm)	Width (mm)	Yield Strength (MPa)	Ultimate Tensile Strength (MPa)	Gauge Length (mm)	Elongation (%)	Hardness (HR30T)	Metallic Coating Adhesion (T- Bend)	Metallic Coating (Triple spot) (g/m2)
1	2408681400	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
2	2408681200	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
3	2408681300	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
4	2408681600	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
5	2408681700	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
6	2408681800	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
7	2408681A00	2408681000	0.75	173	661.0	678.0	80	8,78	76	PASS	154

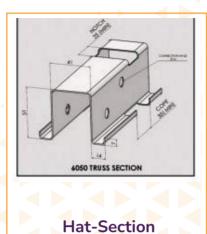
#### Thickness: 0.95mm

_					BASE STEEL MECHANICAL PROPERTIES					METALLIC COATING QUALITY TEST	
Sr. No.	Coil Number	Mother Coil Number	Base Metal Thickness (mm)	Width (mm)	Yield Strength (MPa)	Ultimate Tensile Strength (MPa)	Gauge Length (mm)	Elongation (%)	Hardness (HR30T)	Metallic Coating Adhesion (T- Bend)	Metallic Coating (Triple spot) (g/m2)
1	2408681400	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
2	2408681200	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
3	2408681300	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
4	2408681600	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
5	2408681700	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
6	2408681800	2408681000	0.75	173	661.0	678.0	80	8.78	76	PASS	154
7	2408681A00	2408681000	0.75	173	661.0	678.0	80	8,78	76	PASS	154

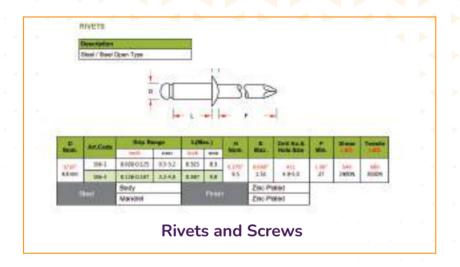
- The material ITSSS uses is from Tata Steel Pvt. Ltd. India.
- Description: G550 AZ150 non alloy steel coil
- Standard: AS 1397/IS15961
- Base Material Thickness: 0.55mm, 0.75mm & 0.95mm Coating: ZINCALUME

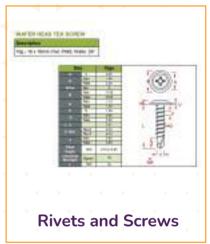
# **ITEM PROPERTIES:**



















### In Partnership with



ZINCALUME® BRAND

### I.T. Steel Structure Solutions Pvt. Ltd.

LAUSA, WARD NO: 1, BANSGADI KANCHAN GAUNPALIKA, RUPANDEHI, PROVINCE 5, NEPAL +977-9851081715 / +977-9857077503

Website: www.itsss.com.np

