

CATALOGUE

PT. TELAGA CAHAYA NUSANTARA



- MECHANICAL
- ELECTRICAL
- INSTRUMENTS & CONTROL
- SURVEY & SAFETY PRODUCT
- LIGHTING
- ALUMINUM STRUCTURE
- EPOXY COATING
- PRE-FABRICATED BUILDING
- CAPSULE
- FORKLIFT HELI

Makassar Office
Jl. Boulevard Komp. Lili Ruko Cempaka No. 1
Makassar 90231 South Sulawesi - Indonesia
Telp. +62 811 454669
Email : info@tcn-corp.com

Jakarta Office
Jl. Raya Casablanca No. Kav. 88
Jakarta Selatan - DKI Jakarta 12870



MECHANICAL

MECHANICAL

KSB Pump, MONO Pump & AJAX Pump Products:

- * Housing Section, Liquid Pump
- * Impeller, Bearing Housing
- * Sleeve, Mega pump
- * Elite-pump, I.S pump
- * FP pump, Seal Assembly
- * Gasket Spacer, Bushing
- * Seal ring, Stator, etc



FLSMIDTH Products:

- * Filter Intake
- * Genuine Fuller Seal Mechanical



INGERSOLL RAND Products:

- * AirWinch, various size, auto disc brakes with remote pilot pendant



JAMESBURY Products:

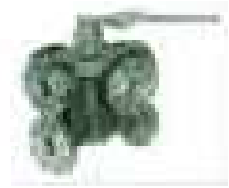
- * Butterfly Valve
- * Wafer Sphere





KRAISSL Products:

- * Complete set of HSFO
- * Duplex Strainer



EVERLASTING Products:

- * Cylinder Assembly



VICKERS Products:

- * Vickers Pump
- * Completed Motor



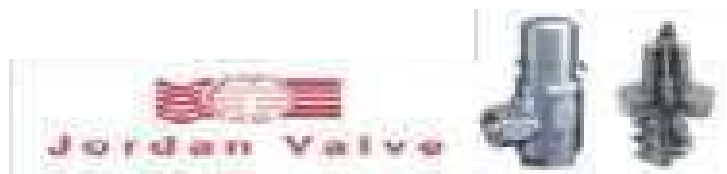
AESSEAL Products:

- * Mechanical Seal for Main Drive Kiln
- * Seal for Everlasting Valve



JORDAN Products:

- * Pressure Regulating Valve
- * Pressure Safety Valve



CRANE Products:

- * Various type and size of Valves



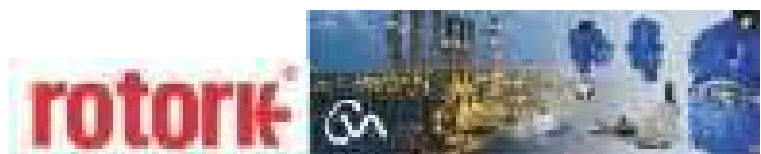
VIKING Products:

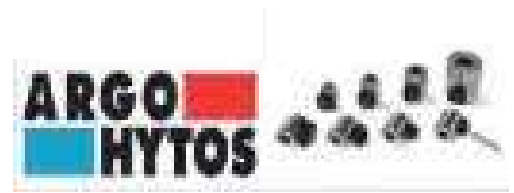
- * Deluge Valve
- * Solenoid Valve



ROTORK Products:

- * Module and all parts
- * Valves, Actuator, etc.







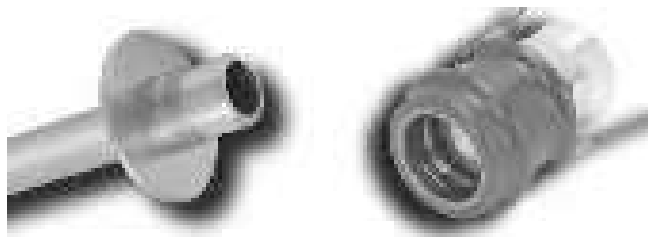
WIGGINS SERVICE SYSTEMS



* NOZZLE



* ACCESSORIES



* RECEIVERS



* COUPLINGS



* VENTS



PUMPS

Vickers Pump 103BRCB, Completed Motor

103BRCB.

382074-3.

V10-1SGS-1C-20.

* Eaton Hydraulics. Inc. 5707 made In Brazil.

* Assembly with:

MOTOR CMG.

Three Phase Motor CE.

Type: SGA-90S-4.

KW:1.1.

Voltage: 380 -420.

Ampere : 2.5.

Rpm : 1410.

Hz : 50.

Cos φ : 0.78.

Eff : 77.4.

* Serial Number: 817172/007-007.



Water Pump; Industrial Pumping

* Southern Cross PSGC2A

80 x 50 - 250 Bare-Shaft Pump

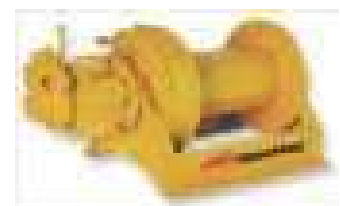


AirWinch

* P/N : FA5A-24XK350G

* 5T IR winch with 24'drum
auto disc brakes with remote
pilot pendant

* Throttle control with 50 ft of hose
control length





Vane, Rotary Pump

- * 2500 SERIES; CAP. 115 TO 330 GPH;
- * MAX. 99 PSI;
- * 1/2IN NPT INLET/OUT



Boiler FeedWater Pumps

- * Filter Exit Manifold;
- * Custom Duplex Filter Exit Manifold;
- * Application: F2 New Hydraulic System



Southern Cross Pumps

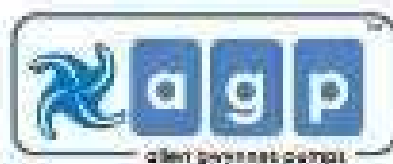
Features

- * Superior hydraulic design and manufacturing methods produce significantly higher efficiencies for lower running costs and reduced maintenance
- * Australian designed and manufactured
- * 32 to 200mm discharge
- * Up to 250 litres per second discharge
- * Heads to 160 metres.
- * World-wide service and backup
- * Wide range of options

SOUTHERN CROSS®



Allen Gwynnes Pumps



VALVES

Directional Control Valve

- * DO3 Directional Control Valve;
- * Spring offset; 24 VDC monitor switch;
230 VAC coils
- * PN : RPE3-062R11/23050E5-S1,,
- * Manufacture: ARGO-HYTOS
- * Arrange by A/F



Rotary Control Valve Design V150, 3 inch

- * Fisher 3 Inch V150 Valve C/w 2052
Size 1 Actuator;
- * DVC6200-PD
- * Disk/Ball Matl: CF3M SST/CRPL



IGEMA Intermittent Blowdown Valve

- * Type KAV1 R1-N, PN 40
- * PS = 32 Bar, TS = 239 Deg C
- * Connection : DN 40 flanged to PN 40



GRINNELL/522 044 951

- * Valve, Alarm, Automatic
- * Sprinkler; Vertical closed drain basic trim style;
- * Model: F20/F200/F2001;
- * FLG/ GROOVE END;
- * 175PSI / 12.1 bar max service press;
- * For fire protection system



EVRLASTING/ AC16075G67ST

- * Cylinder Assembly: Actuating; Linear; 4 inch
- * Cylinder Assembly: Actuating; Linear; Double
- * Cylinder: Size: 4 inch;
- * Application: BLOWPOT INLET VALVE B



FLOW SWITCH

- * POTTER VSR to be applied on water pump for "auto" operation mode.
- * The flow switch to be installed at 3" pipe line.
- * Model VSR -3, part number 1144403





4130 PIPES & FITTINGS

- * SEAMLESS
- * GRADES:
 - *LOW ALLOY STEEL, ASTM A519 GR.4130/4140
API 5CT L80 (MECHANICAL PROPERTIES) &
AS PER AISI 4130/4140
(CHEMICAL PROPERTIES)
- * SIZES:
 - *PIPES - 2
 - *THICKNESS - SCH 40 TO SCH XXS ALSO HIGH THK
 - *FITTINGS - ELBOW - 90 DEG, 45 DEG, 180 DEG, TEES,
 - *REDUCERS



CARBON/ALLOY STEEL PIPES & TUBES

- * SEAMLESS, ERW, HFW, EFSW
- * STANDARD & GRADES:
 - * Standard: ASTM A 106, ASTM A 53, ASTM A333, ASTM A 671, ASTM A 672, ASTM A 139, ASTM A335, ASTM/ ASME A/SA 213
 - * Grade: GR A / GR B / GR C, GR 3, GR 6, GR CC60 / CC65 / CC70 CLASS 10 TO CLASS 73, GR C60 / C70 CLASS 10 TO CLASS 53 / P1, P5, P9, P11, P22, P91, T9, T11, T12, T22, T91
 - * Standard: DIN 1626 / 1629 / 17175 / 17179 / 17204 / 2391 / 2393 / 2394 / 17120 / 17172
 - * Grade: St 33, St 34.2, St 35, St 35.8, St 37.0, St 37.2, St 37.4, St 44, St 44.2, St 44-3N, St 44.0, St 45.8, St 52.0, St 52.3, St 52-3N, 15 Mo 3, 13 Cr Mo 4.4, 10 Cr Mo 9.10, St 52.4, StE 290-7, StE 360-7, StE 415-7. SIZES: (DRL/SRL)
- * SIZES:
 - * SEAMLESS - 1/4"NB TO 28"NB
 - * THICKNESS - SCH 40 TO SCH XXS & HIGHER
 - * ERW/HFW - 1/2"NB TO 30"NB
 - * HSAW - 8"NB TO 100"NB
 - * EFSW -16"NB TO 54"NB (8MM TO 50MM THK)





PIPING

SQUARE & HOLLOW SECTION

- * TYPES:

- * SQUARE & RECTANGULAR

- * MATERIALS:

- * SS & CS

- * GRADE:

- * 204Cu, 304, 304L, 316, 316L, 316Ti, 321, 409, 430, 2101, S235 JRH, S275 JOH, J2H, NH, NLH, MH, MLH, S355 JOH, J2H, NH, NLH, MH, MLH, G1+N, G13+N+Q, S460 MH, MLH, NH, NLH, A554

Steel Grade Available : YST 210 / 240 / 310

- * SIZES

- * Square: Imperial Sizes are also available from 1" x 1" to 20" x 20"

Thickness is available from 0.047" to 1"

Specific dimension and thickness is also available

Length : 12000mm

- * Rectangular: Imperial Sizes are also available from 1.5"x1" to 100"x20"

Thickness is available from 0.047" to 1"



API 5L PIPES

- * SEAMLESS, LSAW/DSAW, HSAW, ERW / HFW

- * GRADES:

- * (A) : API 5L GR B PSL1/PSL2, X42, X46, X52, X56, X60, X65, X70, X80, X100, PSL 1, PSL 2,

- * (B) : L245, L290, L320, L360, L415, L450, L485, L555 "OD TO 54"OD (8MM TO 50 MM THK)

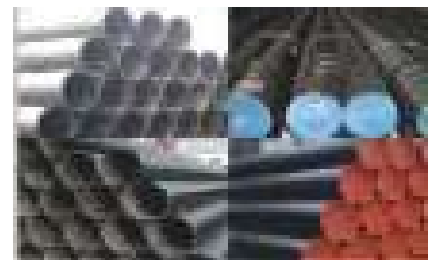
- * SIZES: (DRL/SRL)

- * LSAW/DSAW - 16

- * HSAW - 8"NB TO 100"NB (5MM TO 25MM THK)

- * SEAMLESS - 1/2"NB TO 42"NB (SCH 40 TO SCH XXS & HEAVY THK)

- * ERW/HFW - 1/2"NB TO 30"NB (3.2 MM TO 16MM THK)





STAINLESS STEEL PIPES

- * Pipes, Tubes (SEAMLESS ,WELDED, ERW / EFW, EFSW), Plates, Sheets, Flats, Angles, Coil.
- * STANDARD & GRADES:
 - * Standard:ASTM A312 / ASTM A 213 A 213M/ ASTM A249 / ASTM A358 (CLASS 1 TO CLASS 5) / ASTM A270 / ASTM A268 / ASTM A269 / ASTM A450 / ASTM 554 / ASTM A791 / ASTM A789 / ASTM A 409
 - * Grades: TP 304, 304L, 304H, 309S, 310S, 310H, 316, 316L, 316H, 316Ti, 317L, 321, 321H, 347, 17-4PH
(Related Specification EN/DIN1.4542 X5CrNiCuNb16.4
AFNOR Z6CNU17-O4, ASTM-A564 Grade 630 UNS S17400
JIS SUS630, AMS 5643 5604 EN10088-3)
- * SIZES:
 - * SEAMLESS - 1/8"TO 16"SCHEDULES 10S, 20S, 40S
 - * EXTRA HEAVY (XS) 80, 100, 120, 140, 160, XXS
 - * ERW -2"TO 24"SCHEDULE - 10S, 20S, 40S, 80S
 - * EFSW - 10"TO 60"(6MM TO 50MM THK)



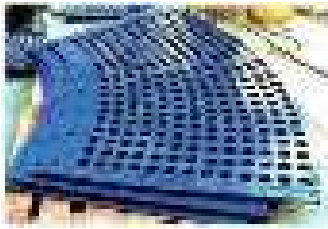
FITTINGS

- * ELBOW, REDUCER, TEE, NIPPLE, HEX, COUPLINGS, FASTENERS, PLUG, CAP, OLETS, WELDOLETS, UNION, VALVE, BEND, 3D INDUCTION BEND.
- * MATERIALS:
 - * STAINLESS STEEL
 - * CARBON STEEL & ALLOY STEEL
 - * FERRITIC / AUSTENITIC STAINLESS STEEL
 - * NICKEL / COPPER / TITANIUM
- * SIZES:
 - * STAINLESS STEEL : SEAMLESS: 1/2"NB - 16"NB, WELDED : 1/2"NB - 32"NB
 - * CARBON STEEL & ALLOY STEEL: SEAMLESS : 1/2"NB- 24"NB, WELDED: 2"NB-48"NB
 - * HIGH NICKEL ALLOY / SPECIAL STEEL
 - * TITANIUM: SEAMLESS 1/2"NB - 10"NB, WELDED : 1 1/2"TO 32"NB

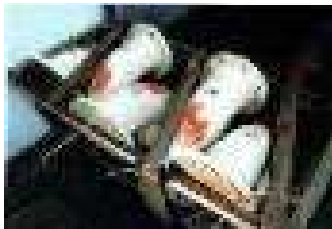


POLYURETHANE

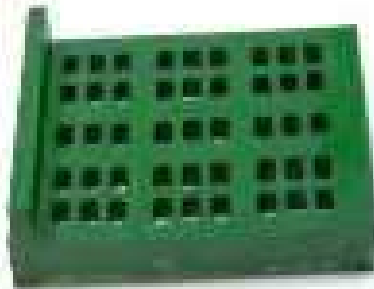
* Poly Disperser + Hood Set



* Inside Pipe Lining

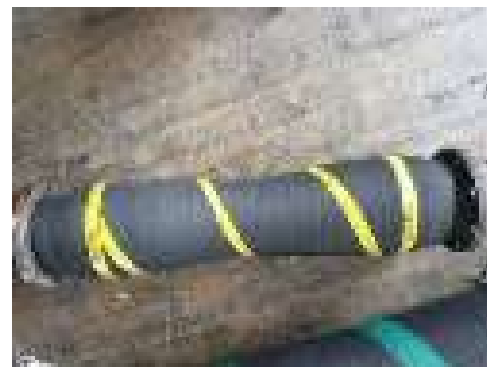
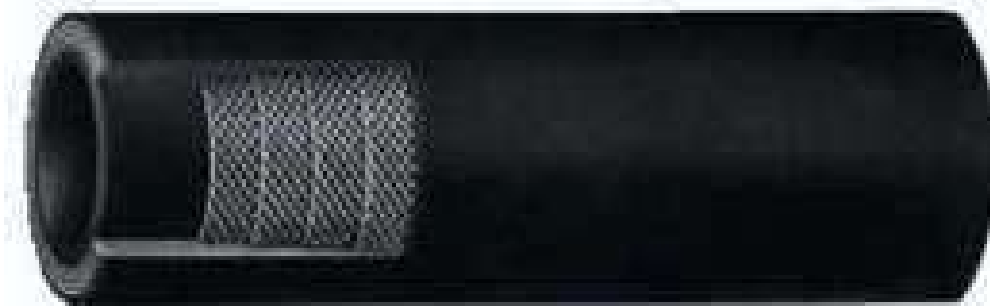


* Panel Screen



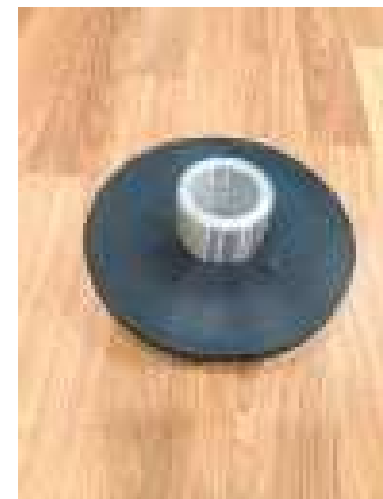
RUBBER

* Flex Hose - Water Delivery Hose



RUBBER

* Rubber Hose



WIRE MESH

* Wire Mesh



WIRE MESH

* Wire Mesh





SANDWICH PANEL

* Room Partition





ELECTRICAL



ELECTRICAL

PANDUIT Products:

- * Junction Box
- * Modular Plug
- * Cable Assembly
- * Fibre Optic
- * Pigtail
- * Raceway Non-Metallic
- * Elbow
- * Marker Identification
- * Electric Cord



CMP Products:

- * Cable Gland, cable connectors



CORNING Products:

- * Interconnecting Cabinet
- * Fibre Optic Cable
- * Fibre Optic Splicing Tray
- * Connector
- * Receptacle
- * Splice Protector
- * Splice Enclosure



TWIN DISC Products:

- * Wide range of power
- * transmission equipment

**CROUSE-HINDS Products:**

- * Cast Box, Cover & Gasket

**BLACKWOODS Products:**

- * Pump drum oil
- * Constructions and all Electric Products

**RS Component Products:**

- * PIB S/AMAL tape, Advances tape
- * Trafalgar rubber tape
- * Electric seal, Plymouth Rubber tape
- * Relay, Switches, Indicator
- * Connectors, Semiconductors

**HALDEX Products:**

- * Emergency CYL ASSY
- * BULKHEAD





GALLAGHER Products:

- * Controller
- * Dual Cabinet
- * TEARDROP MIFARE READER
- * GBUS URI



SIEMENS Products:

- * Control and protection
- * Monitoring and control
- * Starting, detection and safety
- * Commanding and signaling
- * Power distribution and management



COOPER ELECTRICAL AUSTRALIA Products:

- * Bolted Framing (strut systems)
- * Circuit protection
- * Fittings/cable glands
- * Electrical gears
- * Explosion proof/hazardous area signaling
- * Fuses, cable tray, fixing systems, etc.



POTTER VSR Products:

- * Flow Switch, applied on water pump for “auto” operation mode.



GO SWITCHES Products:

- * Lever-less limit switches



CLIPSAL Products:

- * Electrical accessories : Switch and sockets, wiring accessories.
- * Lightings: down lights, wall and ceiling lights.
- * Industrial: Circuit protection, industrial switchgear, motor control gear, etc.
- * Cable management: cable support, M3 soft wiring, module line, conduit metallic and non metallic & installation accessories.



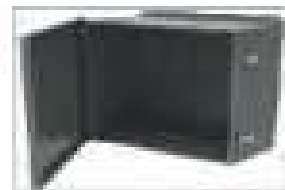
SEALSAFE Products:

- * Flexible conduit and connectors for flexible connections in hazardous area



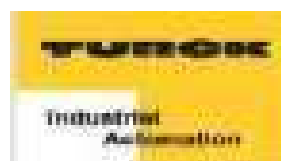
HAMMOND Products:

- * Junction boxes, (analogue, digital, general)



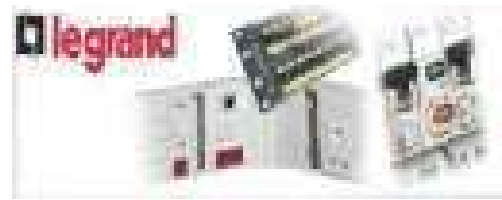
TURCK Products:

- * Switch inertia speed & motion



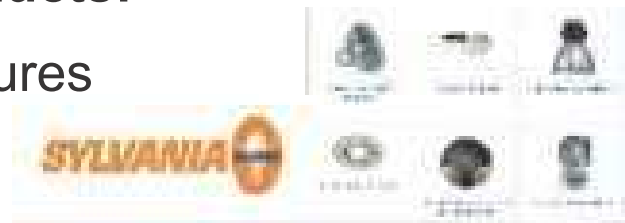
LEGRAND Products:

- * Provide electrical and digital infrastructure for building industry.
- * Ensure digital network performance, protection of material, safety of people and reconfigure electrical installation



SYLVANIA LIGHTING Products:

- * Lamp and commodity fixtures
- * Roadway and tunnel
- * Industrial and commercial



TOSHIBA Products:

- * Fan Power Drive
- * AC Toshiba Card Series
- * AC Toshiba Card MCC Series



3M Electricity Product

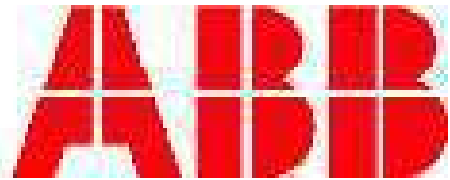
- * 3M Scotchcast Resin Join Kits
- * 3M Coldshrink Termination
- * 3M Separable Connector
- * 3M Coldshrink Splice
- * 3M Jointing
- * 3M Electrical Tape





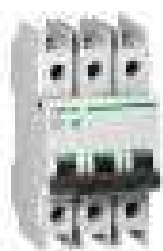
ABB Power and Productivity

Power and productivity
for a better world™



Schneider Electric

* Circuit



* Battery



* Transformers





INSTRUMENT & CONTROL

INSTRUMENT & CONTROL

CLARK RELIANCE Products:

- * Level gauge and transmitter
- * Pressure gauge, Pressure Transmitter
- * PH and DO Analyzer, Weighing Scale
- * Temperature Gauge and Transmitter



BENDER Products:

- * BENDER ISOMETER

200 Vac Supply with output 0-400uA



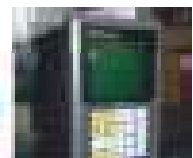
LABEC Products:

- * Hot Plate, with thermostatic temp. Control 50-500 deg C



YAMATO Products:

- * Scale Integrator (controller EDI-2000)



SMC Products:

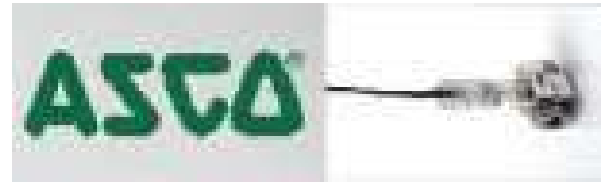
- * Booster Regulator
- * Pressure Gauge
- * Exhaust Silencer





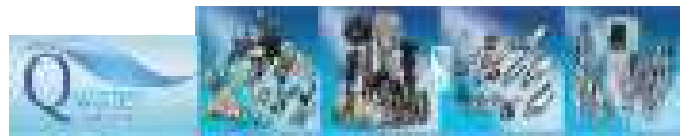
ASCO Products:

- * Pressure Transmitter 3 wire
0-5000 PSI
output: 4-20mA



SPRAY NOZZLE Products:

- * Fog Spray Nozzles
BSFT(Female) with various
flow rate



OMEGA Products:

- * Flow Transmitter FLR Series
flow range 10-100 GPM
OIL:1¼" NPT
Aluminium



NOTIFIER Products:

- * Spare Glass for Fire Alarm Manual
- * Intelligent Thermal (Heat) Detector
Horn/Strobe, 2 Wire, Wall Mounted



ASHCROFT Products:

- * Pressure Gauge
- * Temperature Gauge





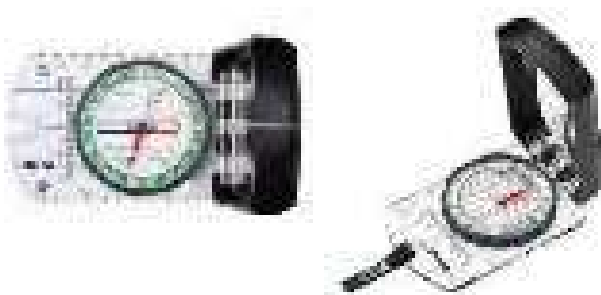
SURVEY & SAFETY PRODUCT



SURVEY & SAFETY PRODUCT

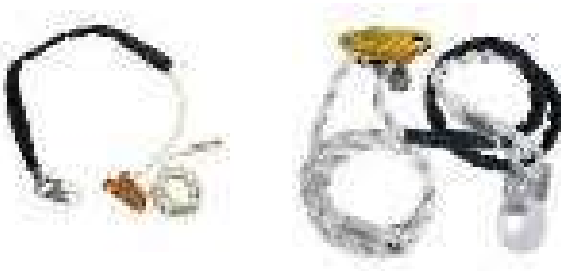
Survey Product :

- * Silva
Compass Silva Ranger



SILVA

- * Petzl
Petzl Grillon Adjustable Lanyard



PETZL

- * Garmin
Garmin GPS Map

GPSMAP® 64S
FULL-FEATURED HANDHELD WITH GPS

GARMIN



GARMIN

SAFETY PRODUCT

- * 3M Respiratory : Disposable Respirator & Reusable Respirator
- * 3M Hearing Protection
- * 3M Head, Eye & Face Protection
- * 3M Welding Protection
- * 3M Body Protection
- * 3M Environmental Detection





LIGHTING

TCN LIGHTING

* Solar Street GT-BJ-60W

MODEL	GT-BJ-60W
PICTURE	
PARAMETER	Solar panel : (5V/70W) Solar panel size : 730*670*30MM Battery : 3.2V/100AH SMD beads: 2COB Bridgelux chip 5000 lumens GT-BJ-60W
CONTROL MODE	Light control + Remote control + Time control
PARAMETER	5 Years Warranty
REMARKS	Lighting 12 hours / day

TCN LIGHTING

* Solar Flood Light

PICTURE	
SPESIFICATION	Product model: 200W serial number S8200 Light body size: 360 * 290 * 90mm Light source model: Sanan 5730 SMD 400LED Solar panel: 355 * 700 * 25mm Solar panel: temperature 12V / 40W Battery: Lithium iron phosphate 6.4V 20000mah Product function: light control + time control (with remote control) Irradiation area: 400 square meters Product material: Anti-oxidation die-casting aluminum + tempered glass Lighting time: sustainable lighting 16H Power: 200W

TCN LIGHTING

* BAT95-T LED Ex-Proof Light

MODEL	BAT95-TLED																								
PICTURE																									
TECHNICAL PARAMETER	<table> <tr> <td>① Input Power</td><td>50-250W</td></tr> <tr> <td>② Input Voltage</td><td>AC220V</td></tr> <tr> <td>③ Frequency Range</td><td>50-60Hz</td></tr> <tr> <td>④ Power Factor</td><td>>0.95</td></tr> <tr> <td>⑤ LED Chip Brand</td><td>Osram</td></tr> <tr> <td>⑥ Material</td><td>Aluminum/PC/PS</td></tr> <tr> <td>⑦ Protection Level</td><td>IP66/IP68</td></tr> <tr> <td>⑧ Anti-corrosion grade</td><td>1000H</td></tr> <tr> <td>⑨ Color Rendering Index</td><td>70-85</td></tr> <tr> <td>⑩ Luminous Efficacy</td><td>110lm/w</td></tr> <tr> <td>⑪ Ambient Temperature</td><td>-40℃~60℃</td></tr> <tr> <td>⑫ Service Life</td><td>>50000h</td></tr> </table>	① Input Power	50-250W	② Input Voltage	AC220V	③ Frequency Range	50-60Hz	④ Power Factor	>0.95	⑤ LED Chip Brand	Osram	⑥ Material	Aluminum/PC/PS	⑦ Protection Level	IP66/IP68	⑧ Anti-corrosion grade	1000H	⑨ Color Rendering Index	70-85	⑩ Luminous Efficacy	110lm/w	⑪ Ambient Temperature	-40℃~60℃	⑫ Service Life	>50000h
① Input Power	50-250W																								
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⑩ Luminous Efficacy	110lm/w																								
⑪ Ambient Temperature	-40℃~60℃																								
⑫ Service Life	>50000h																								
PRODUCT FEATURES	① High strength die casting aluminum housing ② High efficiency, constant current drive, large protection ③ Choose cooling design, rapid cooling ④ High brightness, high light level																								

TCN LIGHTING

BAT95-TBLED Ex-Proof Light



PRODUCT FEATURES

- ⊗ High pressure die casting aluminum housing
- ⊗ High efficiency, cooled and constant current, long life span
- ⊗ Groove cooling design, rapid cooling
- ⊗ Anti explosion proof (Ex-proof)

BAT95-G LED Ex-Proof Light



PRODUCT FEATURES

- ⊗ High pressure die casting aluminum housing
- ⊗ Groove cooling design, air flow cooling technology
- ⊗ Fine heat conduction construction with good and durable property
- ⊗ High Explosion proof grade

BAT95-GB LED Ex-Proof Light



PRODUCT FEATURES

- ⊗ High pressure die casting aluminum housing
- ⊗ Groove cooling design, air flow cooling technology
- ⊗ Fine heat conduction construction with good and durable property
- ⊗ High Explosion proof grade

BAT95-D LED Ex-Proof Light



PRODUCT FEATURES

- ⊗ High pressure die casting aluminum housing
- ⊗ Material: high quality alloy, light weight, energy saving, more than 100,000 hours service life
- ⊗ Groove cooling design, cooled and constant current, long life span
- ⊗ The groove cooling design and indirectly installed, saving wire, maintaining room's cleanliness

TCN LIGHTING

BAT95 LED Ex-Proof Light



PRODUCT FEATURES

- ⊗ Rugged and compact design, dust proof
- ⊗ High quality lamp proof plug
- ⊗ Excellent waterproof ability
- ⊗ Installation method: direct installation and brackets included matched with standard of explosion-proof plug

BAT95R5 LED Ex-Proof Light



PRODUCT FEATURES

- ⊗ High grade with casting aluminum housing
- ⊗ Excellent cooling design, the temperature control is 40 degrees
- ⊗ Low current and good glow, instant light
- ⊗ Installation method: direct installation and brackets included matched with explosion-proof plug

BAT95S7 LED EX-PROOF LIGHT



PRODUCT FEATURES

- ⊗ Excellent protection level, IP67, suitable for all outdoor
- ⊗ Good ventilation through hole to keep the temperature low, quality
- ⊗ Excellent heat dissipation and fast cooling
- ⊗ Installation method: direct installation and brackets included matched with explosion-proof plug

TCN LIGHTING

BAT95-N LED EX-PROOF LIGHT



PRODUCT FEATURES

- ⊗ High pressure die casting aluminum housing
- ⊗ Good anti-corrosion property stainless steel fastener
- ⊗ High borosilicate glass lamp effective protection anti-glass design
- ⊗ Light source chamber, driver chamber, wiring chamber, separation structure for three chambers, adopt indirect entry mode, independent connecting line is welded

BAT95X12 LED EX-PROOF LIGHT



PRODUCT FEATURES

- ⊗ High pressure die casting aluminum housing
- ⊗ High thermal 6064 aluminum dissipating technology
- ⊗ Soft light, not flicky light
- ⊗ Low energy consumption
- ⊗ Listing type, easy to install

BAT95X35 LED Ex-Proof Light



PRODUCT FEATURES

- ⊗ High pressure die casting aluminum housing
- ⊗ Unique cooling design, excellent heat dissipation
- ⊗ Adopt optical lens uniform light
- ⊗ Light source chamber, driver chamber, wiring chamber, separation structure for three chambers, adopt indirect entry mode, independent connecting line is welded

TCN LIGHTING

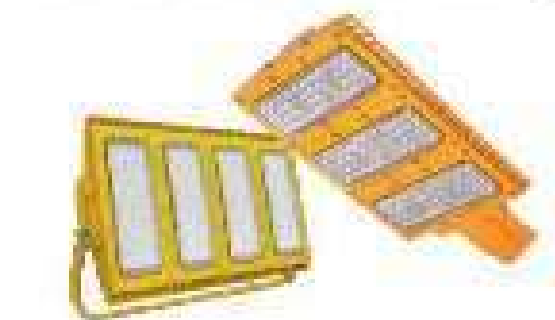
BAT95X60 LED Ex-Proof Light



PRODUCT FEATURES

- ① High pressure die casting aluminum housing
- ② High thermal 6004 aluminum die casting technology
- ③ Soft light, no flicker light
- ④ Low energy consumption
- ⑤ Ceiling type, easy to install

BET85-E LED Ex-Proof Light



PRODUCT FEATURES

- ① High pressure die casting aluminum housing
- ② Good influence on people's vision and health
- ③ PMMA lens shade, high light transmittance, strong shock resistance ability
- ④ Unique shape design, reliable product self-cleaning function, without fogged lens and dust
- ⑤ Widely used in various places

BET85-T500 LED Ex-Proof Light



PRODUCT FEATURES

- ① High pressure die casting aluminum housing
- ② High efficiency, consistent, heat shock, surge protection
- ③ Groove cooling design, rapid cooling
- ④ Suitable for various harsh high temperature

TCN LIGHTING

BAT95-11 Series Ex-Proof Sign Light



PRODUCT FEATURES

- ① One-key manual turning, clear, bright, high visibility, easy to install, saving
- ② Protected by glass and made of stainless steel, high strength and durable
- ③ Built-in intelligent battery, fully automatic charging and automatic power supply and power recovery in case of accidental power failure, the light is automatically turned on
- ④ Emergency working time >30min
- ⑤ Various intelligent functions, such as sound alarm, fault alarm, and other intelligent functions

BAT95-12 Series Ex-Proof Sign Light



PRODUCT FEATURES

- ① High brightness, high visibility, clear, bright, high visibility, easy to install, saving
- ② Built-in intelligent battery, fully automatic charging and automatic power supply and power recovery in case of accidental power failure, the light is automatically turned on
- ③ Emergency working time >30min
- ④ Various intelligent functions, such as sound alarm, fault alarm, and other intelligent functions

BAT95-21 Series Ex-Proof Sign Light



PRODUCT FEATURES

- ① One-key manual turning, clear, bright, high visibility, easy to install, saving
- ② Protected by glass and made of stainless steel, high strength and durable
- ③ Built-in intelligent battery, fully automatic charging and automatic power supply and power recovery in case of accidental power failure, the light is automatically turned on
- ④ Emergency working time >30min
- ⑤ Various intelligent functions, such as sound alarm, fault alarm, and other intelligent functions

TCN LIGHTING

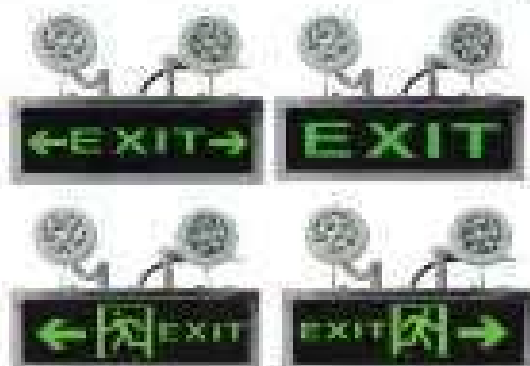
BCJ-22 Series Ex-Proof Sign Light



PRODUCT FEATURES

- ① Adopt high corrosion resistance stainless steel
- ② Built-in emergency power battery pack, automatic charging under normal power supply, emergency power supply in case of accidental power failure, the light is automatically turned on
- ③ Emergency warning light function
- ④ Automatically control emergency and normal lighting state according to charge and use of charge processes

BAT95-23 Series Ex-Proof Sign L



PRODUCT FEATURES

- ① Adopt high corrosion resistance stainless steel
- ② Built-in emergency power battery pack, automatic charging under normal power supply, emergency power supply in case of accidental power failure, the light is automatically turned on
- ③ Emergency warning light function
- ④ Automatically switch emergency and normal functions such as storage, charge and use of charge processes

BAT95-24 Series Ex-Proof Sign Light



PRODUCT FEATURES

- ① Die-cast aluminum housing, anti-rust, treated by aluminum anodizing technology
- ② Adopt high corrosion resistance, equipped with MPT and anti-slip and pressing technology, meet heat conduction
- ③ Integrate light and fire function, produce emergency warning during fire conditions at a distance, with four three-dimensional reflective surfaces
- ④ Complies for 60 and 120 angle observation, reflective for road and building lighting applications



* Nitecore TUP

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FLASHLIGHT

* Nitecore CONCEPT 2



As a new member of Concept Series, the Concept 2 used high power LEDs to reach up to 6500 lumens. It offers a combination of independent performance and innovative design. It comes with a rechargeable Li-ion battery with large capacity. The Concept 2 will be your all-in-one tool for everyday use, outdoor use and emergency.

- ◆ **6500 Lumens**
- ◆ **Intelligent charging circuit**
- ◆ **Built-in 12400mAh High Drain Li-ion Batteries**

Output & Runtime

MODE	MODE	MODE	MODE	MODE	MODE	MODE	MODE	MODE
STANDBY	STANDBY	STANDBY	STANDBY	STANDBY	STANDBY	STANDBY	STANDBY	STANDBY
STANDBY	2000 lumens	2000 lumens	2000 lumens	2000 lumens	2000 lumens	2000 lumens	2000 lumens	2000 lumens
STANDBY	100h	100h	100h	100h	100h	100h	100h	100h
STANDBY	100h	100h	100h	100h	100h	100h	100h	100h
STANDBY	100h	100h	100h	100h	100h	100h	100h	100h
STANDBY	100h	100h	100h	100h	100h	100h	100h	100h
STANDBY	100h	100h	100h	100h	100h	100h	100h	100h
STANDBY	100h	100h	100h	100h	100h	100h	100h	100h

Two Modes



Radical Mode from standby

Tap the side switch 3 times
quickly to enter Strobe



General Mode from standby

Tap the side switch 5 times
quickly to enter Strobe

FLASHLIGHT

* Nitecore TM10K



As the brightest flashlight in the world, TM10K easily makes up to 10,000 lumens and is the best of 2700 system with 6 x CREE XM-L2 HD LEDs. The built-in rechargeable and removable 21700 Li-ion battery offers a truly one-charging mode of 100 hours. Q2.20 mode and low weather protected for rugged portability and a built-in self-charging process. The multi-functional OLED is powered by the 4-core microchip and also displays low battery and thermal TM10K. It has 4 modes are designed for various emergency or tactical needs.



Output & Runtime

	100%	100%	100%	100%	100%
Engineered	10000 Lumens	10000 Lumens	10000 Lumens	10000 Lumens	10000 Lumens
Runtime	100h	100h	100h	100h	100h
Beam Distance	220m	220m	220m	220m	220m
Peak Beam Intensity	20000cd	20000cd	20000cd	20000cd	20000cd
Input Resistance	100Ω				
Power Performance	100W (Maximum)				



FLASHLIGHT

* Nitecore P12/GTS



NEW P12

21700 (32-4.1mm) LED

1200 Lumens

- 21700 Flashlight
- Compact
- Great Performance

1x 21700 Battery 1x 18650 Battery
2x CR123 Batteries 2x RC123 Batteries

Accessories Included

- 1x 21700 Battery
- 1x 18650 Battery
- 2x CR123 Batteries
- 2x RC123 Batteries

As a powerful long-range flashlight from its predecessors, the NEW P12 is powered by a 21700 battery with 1.8 compatibility with 18650, CR123 and RC123 batteries. It has a standard tube diameter of 1.1" (28.4mm) and compatible with multiple LITTCORE™ lumens and various applications. The dual-throw wheel and the deep-throw switch also provide you with ultimate outdoor performance.

Output & Runtime

FUNCTION	HIGH	MID	LOW	ULTRALOW	STROBE	BEAM	SOX
	2000 Amps	240 Amps	18 Amps	1 Amps	100 Amps	200 Amps	100 Amps
	2.5hrs	1h	10h	200h	—	—	—
	100m	20m	10m	5m	—	—	—
	100m	10m	10m	5m	—	—	—
	Infrared (Infrared)						
	P12 3x (Multiple) 1.8 Seconds (1.8)						



P12GTS

21700 (32-4.1mm) LED

1800 Lumens

1x 18650 Battery
2x CR123 Batteries



P12

21700 (32-4.1mm) LED

1000 Lumens

1x 18650 Battery
2x CR123 Batteries



TENT EXPO

HTS | tentia

ALUMINUM STRUCTURE

FOR PERMANENT & SEMI PERMANENT BUILDING

HTS | tentia



PRODUCT RANGE



Clear-Span Structure Systems

Our extensive range of temporary structure

systems provides the perfect framework for multiple applications. From the smallest Pagoda through to our innovative Multi-Level structure systems, there are virtually no limits in terms of design, size, functionality and accessory options from which to select.

All RÖDER HTS HÖCKER tent systems are available for sale directly through our in-house globally based technical sales offices. This ensures that all clients who do business with us receive factory direct service and product support, combined with competitive pricing across all product lines.





PAGODA STRUCTURES

3.00m – 20.00m Width

➤ P12



RÖDER HTS (PZ) PARTY TENTS

3.00m – 10.00m Width

➤ P16



RÖDER HTS (GZ) LARGE TENTS

10.00m – 60.00m Width

➤ P20



HÖCKER P-SERIES

3.00m – 12.00m Width

➤ P26



HÖCKER F-SERIES

10.00m – 60.00m Width

➤ P30



MULTI-LEVEL STRUCTURES

10.00m – 40.00m Width

➤ P34



INDUSTRIAL STRUCTURES

5.00m – 30.00m Width

➤ P40



RAPID DEPLOYMENT SHELTERS

4.75m – 16.00m Width

➤ P46



SPORTS STRUCTURES

10.00m – 40.00m Width

➤ P50



COMPATIBLE STRUCTURES

2.00m – 50.00m Width

➤ P54



CUSTOM STRUCTURES

Variable sizes

➤ P58



INDUSTRIAL STRUCTURES



systems represent a dramatic breakthrough in pre-engineered modular buildings. They offer unbeatable quality and value for money, when compared with traditional building methods, without compromise on quality or durability.

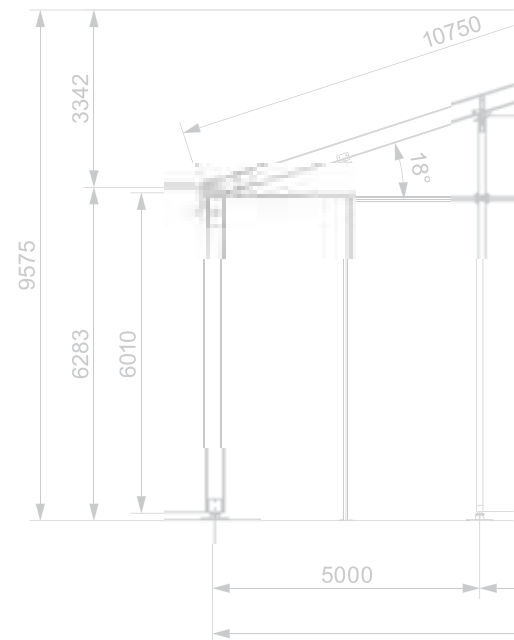
This superior range of building systems provides both end-users and specialist rental companies with instant covered space solutions suitable for a multitude of specialist applications. These include: distribution, logistics, retail, exhibition, production, automotive, showroom, military, aviation, seaport and leisure sectors.





System Features

- Choose from canopies, non-insulated, thermo-insulated or composite steel roofed designs.
- Available in a variety of clear span widths from 5.00m – 30.00m (bespoke and larger spans available on request).
- A cost effective alternative when compared with traditional construction.
- Designed to be installed permanently comply with international fire safety codes.
- All components are fully recyclable at end of life with minimal impact on environment.
- Can be fully engineered and designed to meet site specific international wind and snow load requirements.
- A choice of wall cladding systems to suit both operational and aesthetic needs.
- Choose from a wide range of functions

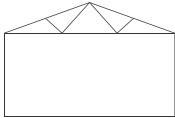
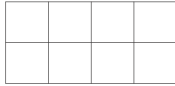
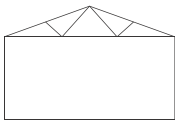
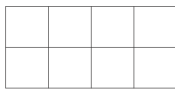
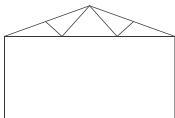
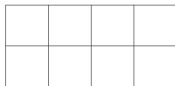
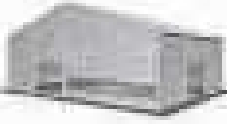
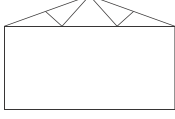
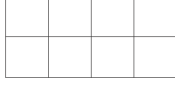




L-SERIES



The innovative L-SERIES semi-permanent building system is available in clear span widths from 5.00m – 30.00m with eave heights from 3.20m – 6.20m, in unlimited lengths (expandable in 5.00m modules) to suit specific site and customer requirements. Choose from CANOPIES, NON-INSULATED, THERMO-INSULATED or COMPOSITE STEEL roofed buildings, all of which are available with a comprehensive range of functional accessories suitable for most operational applications. If specific sizes, designs or load performances shown do not match your requirements, please contact us for more information.

CANOPI STRUCTURES	Roof style	Footprint	Span width	Eave height	Bay distance	Snow loading
			5.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			10.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			15.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			20.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			25.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			30.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
NON INSULATED STRUCTURES	Roof style	Footprint	Span width	Eave height	Bay distance	Snow loading
			5.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			10.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			15.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			20.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			25.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			30.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
THERMO INSULATED STRUCTURES	Roof style	Footprint	Span width	Eave height	Bay distance	Snow loading
			5.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			10.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			15.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			20.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			25.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
			30.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 100kg/m²
STEEL ROOF STRUCTURES	Roof style	Footprint	Span width	Eave height	Bay distance	Snow loading
			5.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 85kg/m²
			10.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 85kg/m²
			15.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 85kg/m²
			20.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 85kg/m²
			25.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 85kg/m²
			30.00m	3.20m / 4.20m / 5.20m / 6.20m	5.00m	45kg/m² - 85kg/m²
				Note: Profile size differs according to eave height and snowload requirement.		



L-SERIES ACCESSORIES



Access Options

Personnel Door
Double Exit Door
Glazed Entrance/Exit Door
Automatic Pedestrian Door
Roller Shutter Door
Sectional Overhead Door
High Speed Curtain Door
PVC Curtain Door
Sliding Door

Roof & Wall Options

Horizontal Composite Wall
Vertical Composite Wall and Gable
Horizontal Corrugated Steel Sheet Wall
Vertical Corrugated Steel Sheet Wall
Horizontal Glass Wall
Vertical Glass Wall
Thermo Inflatable PVC Roof & Gable
Single Layer PVC Roof & Gable
Composite Steel Insulated Roof & Gable
Skylights (with steel roof only)

Ancillaries

Overhead Door Canopy
External and internal Gutter Systems
External and Internal Lighting
HV/AC (Heating, Ventilation, Air-conditioning)
Portal Beam to replace "X" bracing
Crash Barriers
Rafter Cover Flap
Gable Air Vent
Links to Adjoining Buildings 43

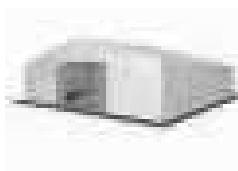
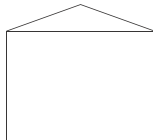
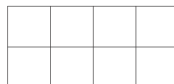
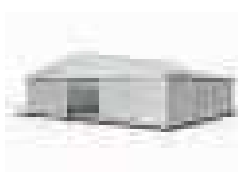
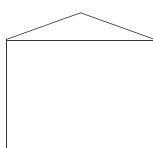
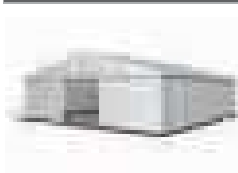
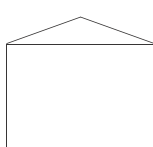
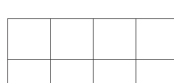




WS-SERIES

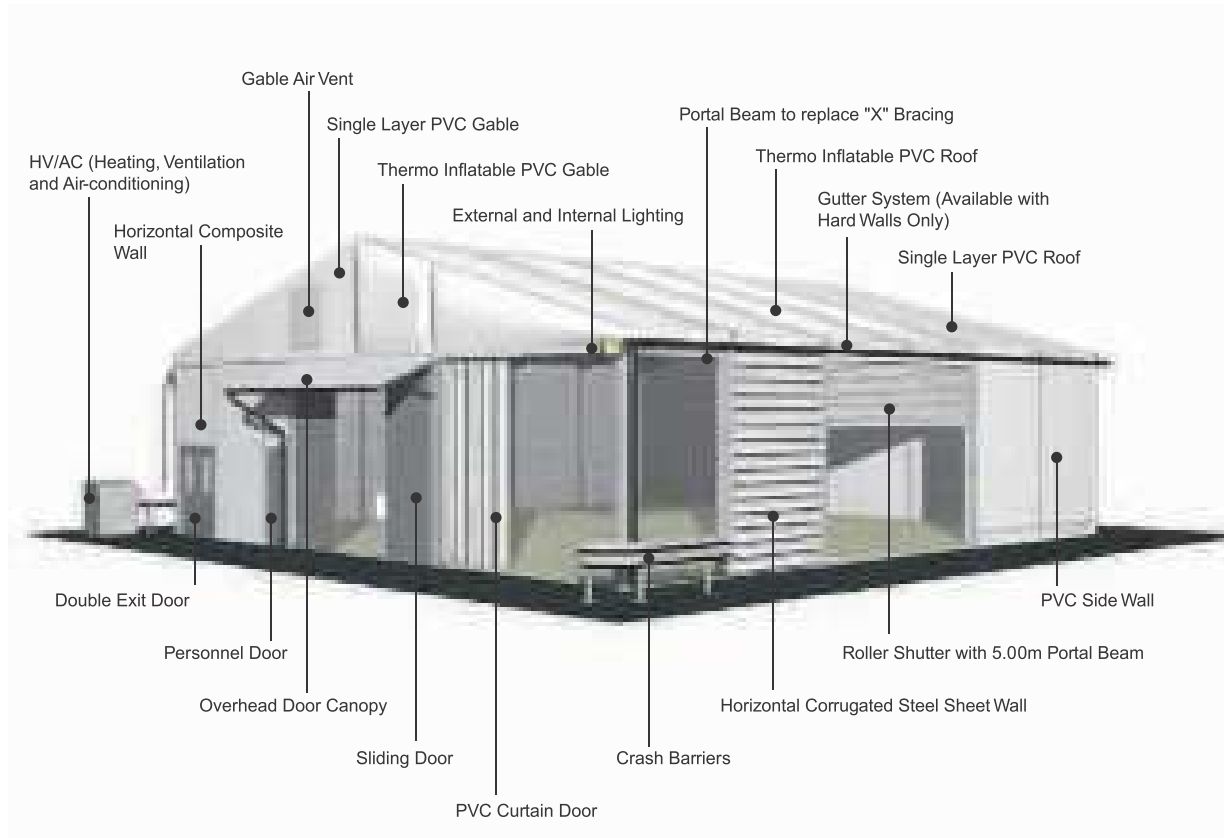


The lightweight, yet robust WS-SERIES product range is available in unobstructed clear-span widths from 5.00m – 20.00m with eave heights of 3.50m and 4.40m, fully extendable in unlimited 2.50m modular bays. Choose from the ECONOMY, STANDARD and PREMIUM WS-SERIES structures, all available with a comprehensive range of functional accessories to suit most operational requirements. If specific sizes, d

WS - ECONOMY	Roof style	Footprint	Span width	Eave height	Bay distance	Snow loading
			5.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			7.50m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			10.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			12.50m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			15.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			17.50m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			20.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
WS - STANDARD	Roof style	Footprint	Span width	Eave height	Bay distance	Snow loading
			5.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			7.50m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			10.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			12.50m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			15.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			17.50m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			20.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
WS - PREMIUM	Roof style	Footprint	Span width	Eave height	Bay distance	Snow loading
			5.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			7.50m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			10.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			12.50m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			15.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			17.50m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
			20.00m	3.50m / 4.40m	2.50m	25kg/m² - 75kg/m²
Note : The profile used on all WS-SERIES buildings is 170/88/3mm.						



WS-SERIES ACCESSORIES



Access & Roof Options

Personnel Door
Double Exit Door
Roller Shutter Door with 5.00m Portal Beam
PVC Curtain Door
Sliding Door
Thermo Inflatable PVC Roof
Thermo Inflatable PVC Gable
Single Layer PVC Roof
Single Layer PVC Gable

Wall Options

Horizontal Composite Wall
Horizontal Corrugated Steel Sheet Wall
PVC Side Wall

Ancillaries

Overhead Door Canopy
Gutter System
External & Internal Lighting
HV/AC (Heating, Ventilation, Air-conditioning)
Portal Beam to replace "X" bracing
Crash Barriers
Gable Air Vent45





MULTI-LEVEL STRUCTURES

stunning yet functionally versatile, our innovative two and three storey structures provide the optimum solution for both short and long term applications where usable space is at a premium and a good view is of prime importance.

As a leading expert in this specialist sector, our user-friendly, innovative multi-level designs set the standard in the world of global events and hospitality offering clients superior quality, in comfort.

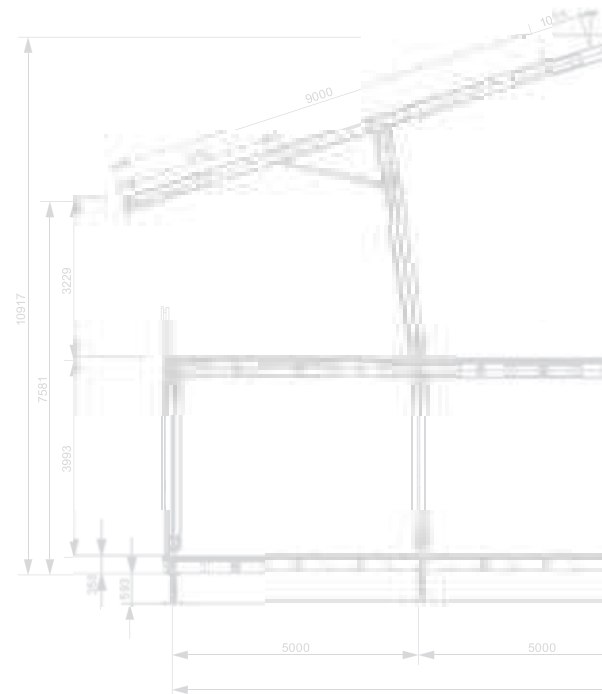


Maximise your opportunities with our extensive range of **MULTI-LEVEL** structures. Visually

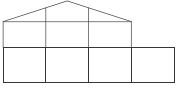
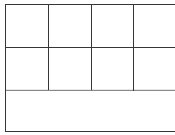
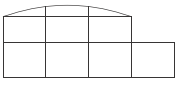
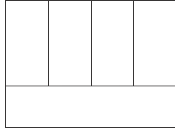
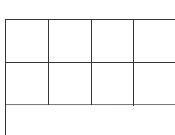
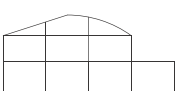
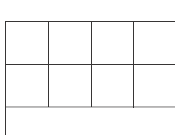


System Features

- Increases additional functional space in restricted areas.
- Available in both 2 and 3 storey design configurations. Curved, Semi Curved, Slanted, Multi-peak and Cube shaped.
- Lower floors based on a standard 5.00m x 5.00m modular grid system. configurations including atriums, balconies and terraces to meet user's specific needs.
- Can be designed to meet regional specific wind and snow load requirements.
- Choose from a variety of aesthetically yet functional accessory products including internal/external staircases and balconies, insulated glazed and solid walling, doors, lighting and HV/AC systems.

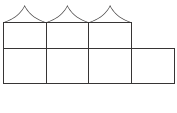
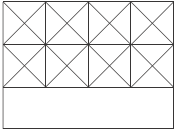
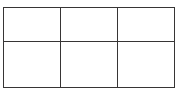
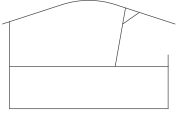
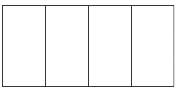
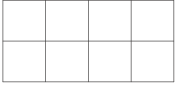


MULTI-LEVEL structures are available in standard span widths of 10.00m, 15.00m, 20.00m, 25.00m, 30.00 and 40.00m all based on an infinite bay distance of 5.00m. The upper levels are constructed on to a lower level of the same size, or if required a larger footprint using our innovative 5.00m x 5.00m ground and middle floor module system which maximizes internal heights by eliminating internal struts. Our extensive range of MULTI-LEVEL structures comprises of eight functional designs including; “A” FRAME, CURVED, SLANTED, SEMI-CURVED, MULTI-PEAKED, CUBE, ICON and MANHATTAN. If specific sizes, designs or load performances shown do not match your requirements

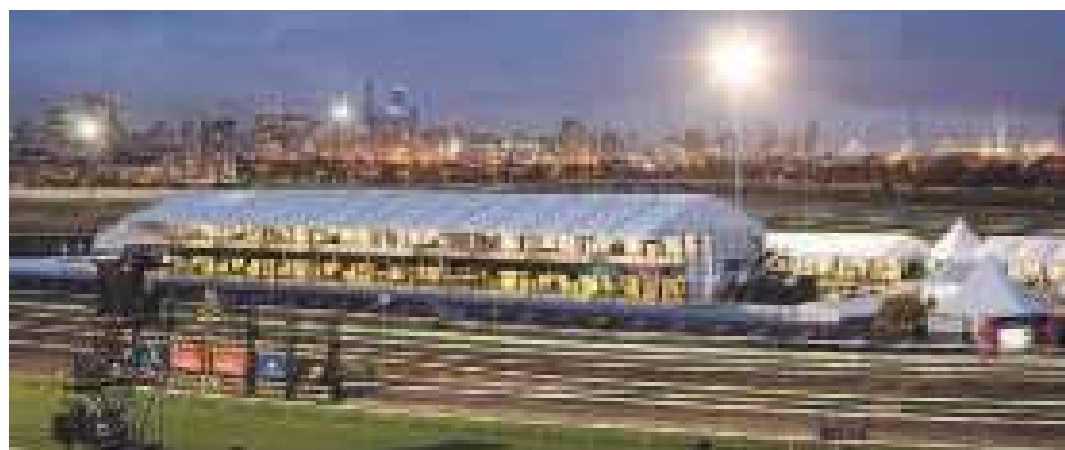
“A” FRAME DESIGN	Roof style	Footprint	Span width	Level options	Bay distance
			10.00m	2 & 3 Storey	5.00m
			15.00m	2 & 3 Storey	5.00m
			20.00m	2 & 3 Storey	5.00m
			25.00m	2 & 3 Storey	5.00m
			30.00m	2 & 3 Storey	5.00m
			40.00m	2 & 3 Storey	5.00m
CURVED ROOF DESIGN	Roof style	Footprint	Span width	Level options	Bay distance
			10.00m	2 & 3 Storey	5.00m
			15.00m	2 & 3 Storey	5.00m
			20.00m	2 & 3 Storey	5.00m
			25.00m	2 & 3 Storey	5.00m
			30.00m	2 & 3 Storey	5.00m
			40.00m	2 & 3 Storey	5.00m
SLANTED ROOF DESIGN	Roof style	Footprint	Span width	Level options	Bay distance
			10.00m	2 & 3 Storey	5.00m
			15.00m	2 & 3 Storey	5.00m
			20.00m	2 & 3 Storey	5.00m
			25.00m	2 & 3 Storey	5.00m
			30.00m	2 & 3 Storey	5.00m
SEMI CURVED ROOF DESIGN	Roof style	Footprint	Span width	Level options	Bay distance
			10.00m	2 & 3 Storey	5.00m
			15.00m	2 & 3 Storey	5.00m
			20.00m	2 & 3 Storey	5.00m
			25.00m	2 & 3 Storey	5.00m
			30.00m	2 & 3 Storey	5.00m

Note: Profile size differs according to eave height and number of levels required.



MULTI-PEAKED ROOF DESIGN	Roof style	Footprint	Span width	Level options	Bay distance
			10.00m	2 Storey	5.00m
			15.00m	2 Storey	5.00m
			20.00m	2 Storey	5.00m
			25.00m	2 Storey	5.00m
CUBE DESIGN	Roof style	Footprint	Span width	Level options	Bay distance
			10.00m	2 & 3 Storey	5.00m
			15.00m	2 & 3 Storey	5.00m
			20.00m	2 & 3 Storey	5.00m
			30.00m	2 & 3 Storey	5.00m
			40.00m	2 & 3 Storey	5.00m
ICON 2-S DESIGN	Roof style	Footprint	Span width	Level options	Bay distance
			10.00m	2 Storey	5.00m
			15.00m	2 Storey	5.00m
			20.00m	2 Storey	5.00m
MANHATTAN 2-S DESIGN	Roof style	Footprint	Span width	Level options	Bay distance
			10.00m	2 Storey	5.00m
			15.00m	2 Storey	5.00m
			20.00m	2 Storey	5.00m
			25.00m	2 Storey	5.00m
			30.00m	2 Storey	5.00m

Note: Profile size differs according to eave height and number of levels required.





MULTI-LEVEL ACCESSORIES



Access & Roof Options
Single Entrance / Exit Door
Double Entrance / Exit Door
Single Layer PVC Roof
Thermo Inflatable Roof
Clear Poly-glass Roof
Rafter Cover Flap

Wall Options
Facade Walling System
ISO-THERM Wall
Panoramic Avant-Garde Glass Wall
Horizontal Avant-Garde Glass Wall
Vertical Glass Wall
ABS Solid Wall
Sliding Glass Wall
Georgian Poly-glass Window Wall
Panoramic Poly-glass Window Wall

Ancillaries
Parapet Signage System
Overhead Door Canopy
External / Internal Entrance Ramp
Standard or Premium Balustrade
Gutter System
Internal & External Staircases
Portal Beam to replace "X" bracing
Steel Sub-frame Flooring with Timber Boards
Aluminium Cassette Flooring with Ply Boards
Heavy Duty Floor System
Transportation Racks for all Components



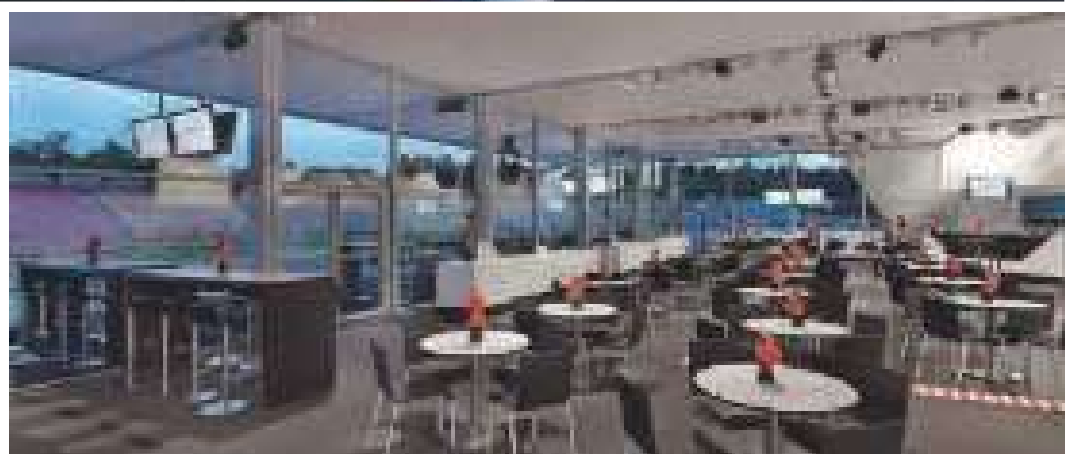
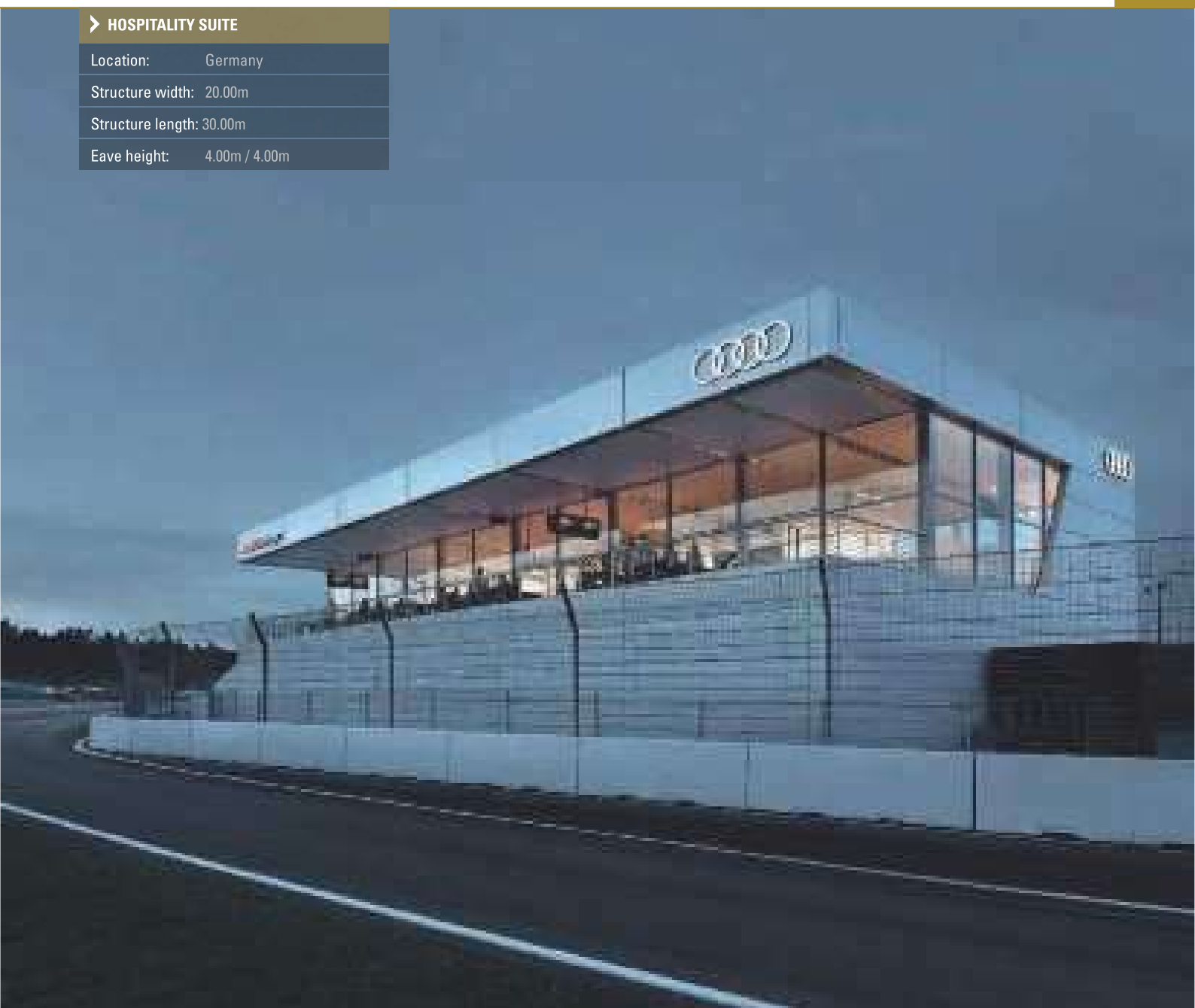
➤ HOSPITALITY SUITE

Location: Germany

Structure width: 20.00m

Structure length: 30.00m

Eave height: 4.00m / 4.00m





EPOXY COATING

PRODUCTS

Our technology and innovation are supporting various industries.

We are a world leading company in manufacturing marine paint products. We have also provided innovative paint products and solutions for various industrial segments. Paint coating form the foundation of our R&D efforts and have led to our development and growth of paint coatings technology. Our products and technologies have in turn formed the core of our areas of expertise, operation, and distinctive paint science, and have led to new materials and products with high added value and the creation of new business models.

Marine Paint Field



Ships

CMP provides full range of coatings for marine use such as Antifouling coatings, tank coatings, etc.

- Worldwide trading ships
- Coastal ships



Fishing boats and fish nets

Based on the technology accumulated from the marine field, we provide full product line up for this segment.

- Fishing boats
- Fishnets



Pleasure boats and yacht coatings

"SEAJET" brand is now familiarized in pleasure boat and yacht market.

- Pleasure boats
- Yachts

Container Paint Field

Container coatings



Coated container boxes are distributed all over the world by global logistics.

- Marine containers
- Railway containers
- Offshore containers

Industrial Paint Field

Protective coatings



Protecting assets from corrosion and deterioration. With our unique ideas, we have been continuously developing the protective coating technology for many years.

- Bridges
- Power equipment
- Plants
- Various constructions

Offshore coatings



We are contributing to the renewable energy industry with our unique technology.

- Oil platform
- Offshore power facility
- Various floating constructions

Building material coatings



High safety standard is required for interior coatings. We are increasing our share in this segment with our interior products. directly come into contact with.

- Flooring
- Interior and exterior furnishing materials
- Furniture
- Bathroom (refurbishing)

Plastic coatings



Coatings can provide various added values to the plastic materials which is making our daily life more comfortable.

- Films
- Molded articles

Caulking materials



Caulking materials with excellent durability is supporting our safety in our daily life.

- Railway tracks
- Fixing equipment
- Cable-stayed bridge cables



Technology and experience gained from over a century

In order to enhance fuel efficiency of trading ships our Antifouling technology is utilized to prevent micro- and macro-fouling on ships' underwater hull as well as aquaculture industry. Antifouling demand tends to increase along with a recent change of seawater environment. Throughout 100 years' experiences we continue to develop the Antifouling technology as marine coating supplier.

- Vessels (Bottom, Propeller)
 - World wide service ships
 - Coastal ships
 - Pleasure boats
 - Fishing boats
 - Fishnets
- Small ships (Bottom, Propeller)
 - Bridges
 - Plants
 - Power equipment
 - Oil platform etc.
- Offshore constructions

What is antifouling coating

What does antifouling coating do?

Antifouling coating is a functional coating which prevents marine organisms to settle on underwater substrate. There are various types of fouling which reduces the ship's performance. These coatings are used mainly on ships, offshore structure, fish farms and power plant water intake pipes.



Left: Steel plate WITHOUT antifouling
Right: Steel plate WITH antifouling

Antifouling coating development

Newly developed antifouling coatings will go through various simulation tests in our laboratory. Ones which succeeded the tests will proceed to field tests which is carried out at our offshore rafts at actual sea and test application to actual operating vessels for further analysis.



Coating Film Testing at Shipyards



Floating rafts



Dynamic antifouling performance testing equipment



Antifouling performance test on actual vessels

Main antifouling types

Self-polishing antifouling

Antifouling coating provides its performance by chemically reacting the surface of the coating with sea water. We have been developing technologies to reduce CO2 emission from ships.



Antifouling coating now being applied (large vessels)



Antifouling for Fishing boats



Antifouling for Pleasure boats

Silicone antifouling

A nano domain structure of silicone provides fouling release of macro-fouling. The technology is utilized in ships' hull, propeller, power plants and offshore structures.



Vessels



Propeller



Power equipment



Offshore constructions



Antifouling for Propeller (Pleasure boats, Fishing boats)

Fishnet antifouling

By growth of aquaculture industry fishnet coating is focused to support the productivity.



Antifouling coating now being applied (large vessels)



Protecting materials under severe environment and save resource

Anticorrosive coating protects various substrates from deterioration. By applying multiple coats, coating system gives a high durability for coated structures and objects.

vessels

Universal primer

Water ballast tanks

Cargo holds

Accommodation space

Decks

Radars

Various constructions

Bridges

Plants

Power equipment

Offshore constructions

Other various constructions

Containers

Anticorrosive coatings

Newbuilding vessels



Universal primer



Water ballast tank coatings



Abrasion resistance coating for Cargo Hold



Waterborne paints (Vessel's internal area)

Various constructions, containers



Ultra-long durability inorganic coatings



Glass flake coatings



Anti-corrosive coatings for concrete



Paints for containers

Special coatings

We have been developing special coatings with unique ideas and technologies such as thermal reflection, radio wave absorption and underwater applicable coatings, etc.



Under water applicable coating

Our underwater applicable coatings are widely used for maintaining offshore constructions and bridges.



Application to wet surface (Preventing concrete exfoliation)

Our preventing concrete exfoliation method on wet surface is approved by Japanese ministry of transport and listed in the new technology information system "NETIS".



Titanium foil and Fluororesin coating method

This application method can renew the old steel structure's deteriorated coating to freshly coated film.



Heat reflecting coatings

Heat reflecting coating can contribute to energy saving. These coatings are used on roofs, walls and ship decks. It is also available in water born type.



Radio wave absorption coating

Our radio wave absorption coating is used on steel tower and ship's radar. By applying this coating radio disturbance can be improved.



Ultra long durability coatings(Fluororesin coating)

Due to its ultra long durability, Fluororesin coatings are widely used for exposed constructions.

Development of anti-corrosion coatings

Only the products which satisfy all the strict standards are marketed.



Analysis of coating films



Accelerated weathering test



Environmental tests



Outdoor exposure



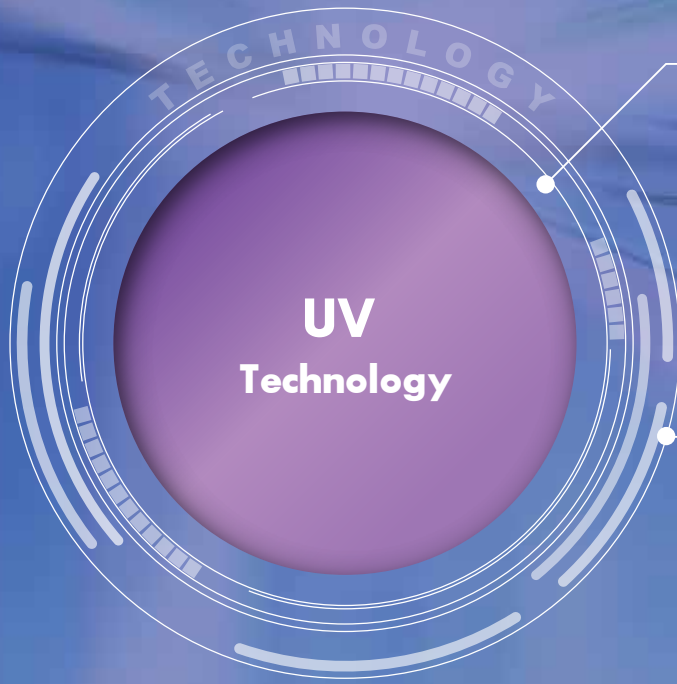
Coal scratch test



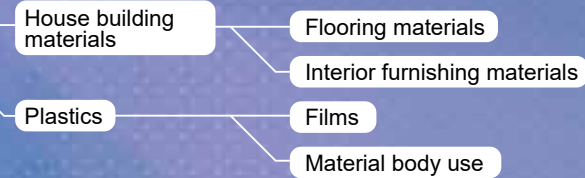
Cargo holds

We have an abrasion resistance test with strict internal standard for cargo hold coatings to meet a requirement of hard and soft cargoes.

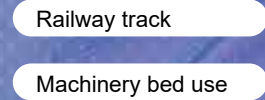
Unique ideas and reliable technology is supporting our life and safety



Ultra Violet (UV) curable coating which we introduced in 1981 brought substantial rationalization to wood flooring coating production from its rapid curing characteristic. Now the same technology has been introduced to plastic coating and used in variety of industrial products.



Caulking materials with moderate elasticity defuses the impact and vibration which result in excellent durability. Our Caulking materials are used for rail track, vessel's engine bed and other heavy machinery installation.



UV curable coatings

House building materials

Wood materials for house building are closely related to our daily life. We follow our philosophy of "Harmony with the environment". CMP is continuously working on reducing VOCs (Volatile Organic Compounds) and formaldehyde which are considered to be the causes of allergic reactions.

Plastic coatings

"PHOLUCID" is a coating for plastic and film. By coating the surface of plastic, it can add various functions to the substrate. This technology is used for car head lights, touch screen and consumer electronics.



Flooring materials



Interior furnishing materials



Film use



Material body use



We also develop tailor made coating to match the production line of individual factory.



In addition to UV curable coatings, We have developed coatings for building materials, such as on-site woodworking coating, coating for exterior furnishing materials and coatings for renovating bathrooms.



Main Lining products

Railway track

"CUS" is Polyurethane grouting material which are especially designed for rail tracks (both new construction and track maintenance). "CUS" contributes to the reduction of maintenance and the safety of railway transportation by maintaining the track structure.



Caulking material for railway tracks



Widely used in all kinds of railway tracks

Machinery bed use

Our calking material is 2 component non-solvent epoxy which is used in vessels and onshore machinery beds.



Solvent-free two component epoxy resin caulking materials



Application





Our aim to reduce environmental footprint and harmonizing with nature

Coatings play a role for protecting various substrates such as steels, concrete and woods. We continue improving coating technology to save resources by extending total life of assets.

Resource saving

Global warming prevention

Fuel-saving antifouling

High sunlight reflecting coatings

Clean environment

Silicone foul release coating

Environmental-Friendly Antifouling Agents

Reducing air pollution

Waterborne

Solvent-free

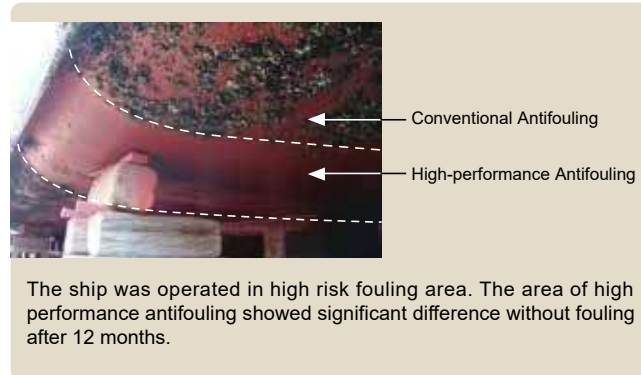
Weak-solvent

Human-friendly

Supporting the safety

Reducing green house gas emission

By reducing friction resistance of antifouling coating on ships' hull emission from ships can be reduced during operation.



Our new technology has contributed to improve fuel consumption and CO2 emission from ships.

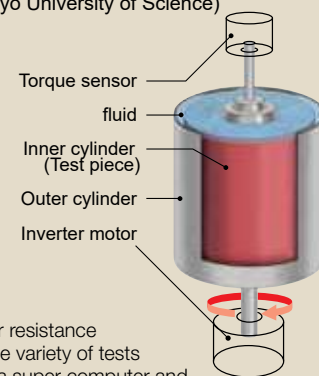
Friction research between sea water and vessel outer hull.

We have invested in research of how antifouling coating can contribute to vessel's fuel consumption and through the research, we have identified the mechanism of how the roughness is affecting the vessels friction between the seawater. This research was implemented in our FIR theory. By using the method we estimate the expected fuel consumption and amount of CO2 emission. We are jointly working with ship technology association and university to develop the future technology.



Taking hull surface data and analysis

Double-cylinder resistance measuring equipment (joint development with the Tokyo University of Science)



In addition to the double-cylinder resistance measurement, we perform a wide variety of tests including flow simulations using a super computer and water tank tests using ultra-high precision parallel plates.

Clean environment

Silicone antifouling

We provide a biocide free foul release coating.



CMP BIOCLEAR HB is a biocide free silicone foul release coating applied for worldwide trading ships.



BIOCLEAR ECO is supplied for offshore structures and intake pipes of power plants.

MOSE project in Venice (picture at the left)

Low environmental impact Antifouling agents

The safe materials have to be considered for use with antifouling products. We register antifouling materials to the European Biocidal Products Regulation (BPR).



The latest low friction antifouling with BPR registered materials is applied. (Picture at the left)

Reducing air pollution

Low VOC products

Volatile organic compounds (VOCs) released into the air is one of the main cause of air pollution. CMP is continuously developing low-VOC products to reduce toluene, xylene and ethyl benzene in our products.



High solid Universal Primer



Toluene- and xylene-free Paint for Flooring

Complete changeover to waterborne products (container paints)

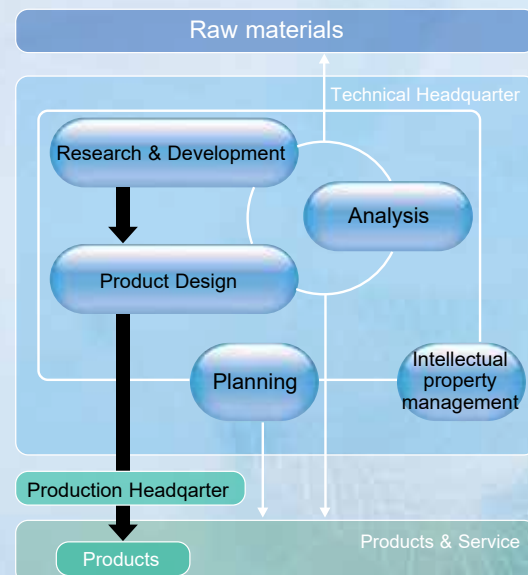
A majority of container boxes are produced in China. China has recently enhanced their environmental protection policies to reduce the environmental impact. We have completed to change all of our container coating product to waterborne type coating which has lower VOC component than solvent type to reduce the air pollution.



R&D

CMP's R&D System

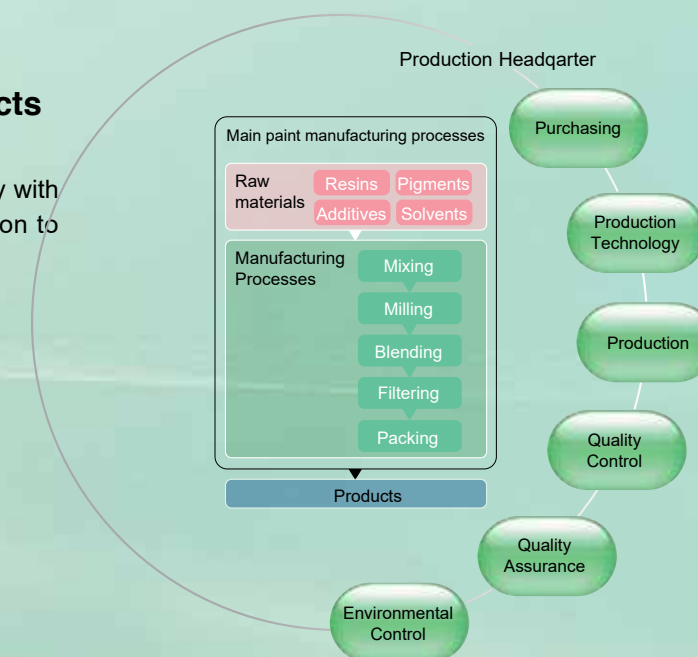
"Technology builds trust", our concept toward research and development is achieved by team work of Basic research division, Product development division, Analysis department, Intellectual property management department, and Planning and marketing department. We have developed products which will contribute to Environmental conservation and construction process rationalization. These technologies have been highly appreciated by the market. We also actively collaborate with variety of third party research and development organization to develop ideal products.



PRODUCTION

Commitment to provide high quality products

We will continuously pursue our product trust and the quality with latest production technology to provide product and solution to the market.



Research



Technical Headquarter
(Hiroshima)



Technical Headquarter
(Shiga)



Clean painting room



Analysis of coating films



Chemical laboratory
(Instrumental analytical laboratory)



Coating machines

Basic research

Core raw material research and basic design of next generation' s product is processed in our Basic research department. We have full facility of testing and examination facility at our laboratory and these facility are supporting our mid to long term prospective research. Result of the basic research is supporting our company to provide new value to the market.



Polymer synthesis experiment



Outdoor exposure

Production

Our production line layout is optimized for smooth production from emplacement of raw material to shipment of completed product. Production is carried out under strict quality control under ISO 14000.



Control panel
(Singapore factory)



Dispersion mill (Shanghai factory)



Quality control
(Indonesia factory)



Product warehouse (Thailand)



Dispersion mill (Netherlands factory)

Reduction of environmental burdens

At each and every CMP factories, we manage chemical emissions during manufacturing processes. We continuously update our reduction targets for hazardous substances and VOC emission. We also consider recycling, reusing waste and organizing to keep the factory clean and organized.



Ventilation equipment
(Shiga factory)



Effluent treatment facility
(Kyushu factory)



Deodorizing equipment
(Kyushu factory)



Beautification of factories
(Shanghai factory)

Bulk container supply

In order to reduce the amount of waste for factories, we have developed bulk container supply and automatic mixing system (IBC system) to optimize the production process and achieve to reduce the industrial waste at the same time.



IBC (Intermediate Bulk Container)

CATALOGUE

PT.TELAGA CAHAYA NUSANTARA

PRE-FABRICATED BUILDING



by :



PT. SANWA PREFAB TECHNOLOGY

Makassar Office

Jl. Boulevard Komp. Lili Ruko Cempaka No.1
Makassar 90231 South Sulawesi - Indonesia
Telp. +62 811 454669
Email : info@tcn-corp.com

Jakarta Office

Jl. Pemuda Kav. B2 No. 1 Lt. 2
Rawamangun 13220 East Jakarta - Indonesia

DIRECTORY

1	PREFABRICATED K HOUSE 01-04	
2	PREFABRICATED T HOUSE 05-08	
3	STEEL STRUCTURE 09-10	
4	CONTAINER HOUSE 11-14	
5	LIGHT STEEL VILLA 15-18	
6	SECURITY GUARD BOOTH 19-20	

	REMOVABLE FENCING 21-24	7
	INDOOR PURIFICATION ROOM 25-26	8
	SANDWICH PANEL 27-28	9
	ROOFING PRODUCT 29-30	10
	PROJECT REFERENCE 31-40	11



PREFABRICATED K HOUSE

PRODUCT FEATURES:

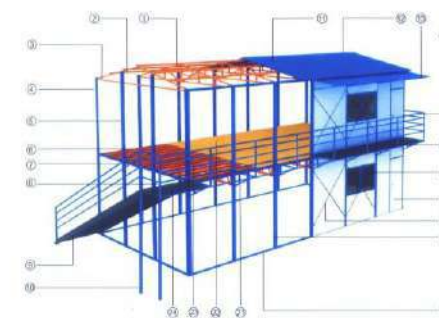
1. Reliable structure: Light steel meet the demand of building structure design, because its flexibility, safety and reliability.
2. Easy to install and dismantle: It can install and dismantle repeatedly.
3. Beautiful decoration and flexible layout.
4. The service life can be around 15 years.
5. Environmental protection: recycling use.
6. Various specifications: $mk \times nk \times ap = \text{width} \times \text{length} \times \text{height}$ $1k=1820mm$, $1p=950mm$



SANWA PREFAB TECHNOLOGY

Prefabricated K House

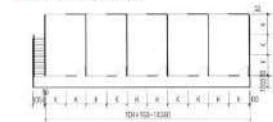
BUILDING STRUCTURE:



- | | |
|------------------------------|-----------------------|
| 1. Roof Truss | 11. The Middle Column |
| 2. Roof Purlin | 12. Ground Beam |
| 3. Ring Beam | 13. Walkway Brackets |
| 4. Angle Column | 14. Floor Panel |
| 5. Gable Pillar | 15. Floor Beam |
| 6. Room Floor Truss | 16. Platform Bracket |
| 7. Stair Handrail | |
| 8. Rail | |
| 9. The Stairs | |
| 10. Platform Bracket Columns | |
| 11. Roof Panel | |
| 12. The Roof Tile | |
| 13. Awning | |
| 14. Rail | |
| 15. But I Walk | |
| 16. Aluminum Alloy Sash | |
| 17. Composite Door | |
| 18. Adjust The Tie Rod | |

BUILDING LAYOUT:

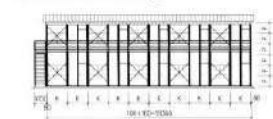
Floor Drawing



Foundation Drawing



Positive Drawing



Side Drawing



ENGINEERING CASES DISPLAY :



ENGINEERING CASES DISPLAY :





PREFABRICATED T HOUSE

PRODUCT OVERVIEW :

1. Prefabricated T house is made of light steel structure for its main frame and sandwich panel for wall and roof.
2. The stuffing of sandwich panel can be rock wool, polystyrene (EPS) and polyurethane (PU).
3. The service life can be around 15 years.
4. Easy to assemble and disassemble
5. Environmental protection: recycling use
6. This house is widely used as temporary office, temporary hospital, family house, dormitory, canteen and so on.2

There are two kind of prefabricated T (1)~(10) house. The one is flat roof prefabricated house, the other one is slope roof prefabricated house. It is a brand new kind of environmental and affordable house. We use the light steel structure as its framework system and use sandwich panels and tiles as cover system.



SANWA PREFAB TECHNOLOGY

Prefabricated T House

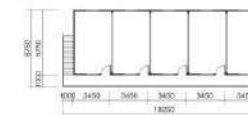
BUILDING STRUCTURE :



1. Roof On
2. Roof Panel
3. Wooden Splints
4. Condole Top
5. Collar Beam
6. Steel Beam
7. Post
8. Beam Floor Time
9. Floor Girder
10. Steel Column
11. The Stairs
12. Platform Bracket Columns
13. Concrete Ground
14. Walkway Railings
15. Wall Panel
16. Push-pull Window
17. Awning Pillar
18. Composite Panels Single Door

BUILDING LAYOUT :

Floor Drawing



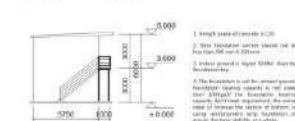
Positive Drawing



Foundation Drawing



Side Drawing





ENGINEERING CASES DISPLAY :



SANWA PREFAB TECHNOLOGY

Prefabricated T House

ENGINEERING CASES DISPLAY :





STEEL STRUCTURE

PRODUCT OVERVIEW :

Series of steel structure housing overall stress intensity is high, can satisfy the requirement of building structural design specification, is currently the best performance of a building. Steel structure can achieve heat insulation, thermal insulation, sound insulation, waterproof, moistureproof, anti-corrosion, seismic and wind resistance effect, normal service life can reach more than 35 years.

SANWA PREFAB TECHNOLOGY

Steel Structure

Specification	Standard span	12mm/15m/18m
	Standard eaves	3.5m/6m
	Standard column spacing	4m/6m
Structure Component	Roof slope	Double pitch, 1 : 5
	Main beam	2-M300, textureQ345B ; 2-M350, textureQ345B
	Steel column	2-M300, textureQ345B ; 2-M350, textureQ345B
	Roof Purlin	C180, textureQ235
	Wall purlin	C180, textureQ235
	X-brace, Tension bar	16mm round steel (X-brace) , 8mm steel wire rope (Level crossing support) , 12mm round steel (Tension bar)
Structure Parameters	Foundation	Reinforced Concrete independent foundation / The whole foundation
	Roof constant load	0.25kN/m ²
	Floor live load	0.35kN/m ² (6m column space), 0.50kN/m ² (4m column space).
	Wind load	0.45kN/m ² (6m column space), 0.60kN/m ² (4m column space).
	Snow load	0.35kN/m ² (6m column space), 0.50kN/m ² (4m column space).
	Earthquake	8 degrees, 0.2g
	Surface treatment	a) Hot galvanizing b) Painting

STEEL STRUCTURE

ENGINEERING CASES DISPLAY :





CONTAINER HOUSE

PRODUCT OVERVIEW :

Container House is using currently international popular modular building design concept and manufacturing processes. It can be based of single container, combining various different functions and requirements. It is easy to assemble and dismantle, because of modular sizes of each standart component.

SANWA PREFAB TECHNOLOGY

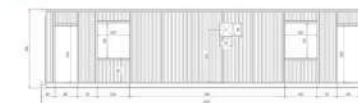
Container House

Specification	Frame Structure	4.0mm Cold formed profile steel
	Corrosion Protection	Polishing / Derusting
	Primer Coat	epoxy zinc-rich primer two layer
	Finishing Coat	alkyd honed painting white color
	Roof	2mm Bending steel plate
	Ceiling	50mm color steel sandwich panel
	Wall	50mm color steel sandwich panel
	Flooring	20mm plywood board + PVC vinyl flooring
	Door	Aluminium frame with color steel sandwich panel
	Window	PVC glass sliding window
Technical Parameter	Packing	Flat down packing
	Loading	6 sets 20 ft container house can be loaded in 1x40HQ
	Temperature Resistance	(-45)°C to 50°C
	Earthquake Resistance	Grade 8
	Wind Resistance	100km/h
	Floor Live Load	2KN/m ²
	Roof Live Load	0.5KN/m ²
Standard Dimensions	Life Span	More than 15 years
	20	ISO : 6066mm*2438mm*2900mm
	40	Factory : 5850mm*2438mm*2900mm
		ISO : 12192mm*2438mm*2900mm
		Factory : 11700mm*2438mm*2900mm

CONTAINER HOUSE

BUILDING LAYOUT :

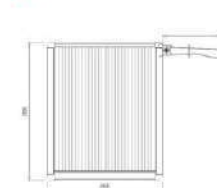
Floor Elevation



Positive Drawing



Side Elevation





A. CONTAINER HOUSE ENGINEERING CASES DISPLAY :



SANWA PREFAB TECHNOLOGY

Container House

B. PREFAB CONTAINER ENGINEERING CASES DISPLAY :





LIGHT STEEL VILLA

PRODUCT FEATURES:

1. Reliable structure: tight sealing, waterproof, fireproof and damp proof
2. Beautiful appearance and affordable price
3. Long service life: more than 35 years
4. Environmental protection: recycling use

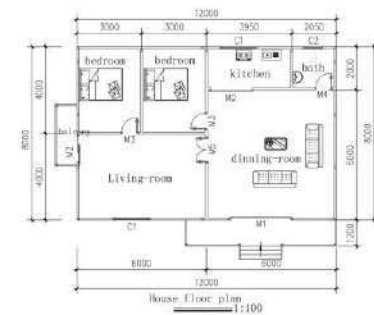
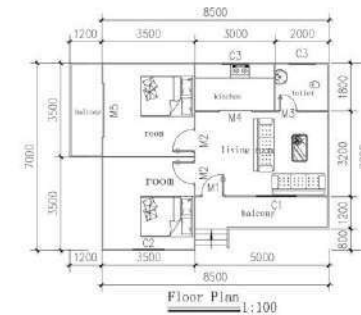
Light steel villa is a kind of special design for the low-dwelling and commercial building, with the feature of environmental protection and energy-saving. Light steel frame is the main structure, so it is safe and reliable. It is one of the best prefabricated house and it can meet the requirement of building standard design.



SANWA PREFAB TECHNOLOGY

Light Steel Villa

BUILDING LAYOUT:



LIGHT STEEL VILLA

ARCHITECTURAL RENDERINGS:



Specification	External Wall Panel	Double side 0.3mm -06mm color steel. Middle core is 50mm-300mm EPS, density: 8kg/m ³ -20kg/m ³ . Interior frame uses 1.2mm-2.0mm U channel steel.
	Interior Wall Panel	Double side 0.3mm -06mm color steel. Middle core is 50mm-300mm EPS, density: 8kg/m ³ -20kg/m ³ . Interior frame uses 1.2mm-2.0mm U channel steel.
	Roof Panel	Double side 0.3mm -06mm color steel. Middle core is 50mm-300mm EPS, density: 8kg/m ³ -20kg/m ³ . With dripping cave for running rain water.
	Truss & A Beam	Using hot galvanized C channel steel and U channel steel.
	Purline	Using galvanized steel materials (Omega channel, C channel, Square tube)
	Door	Steel security door, composite wood door, SIP door (Sandwich Panel door); Aluminium Alloy Door; Sliding door, PVC door.
	Window	PVC steel window or aluminium alloy window.
	Stair	Hot galvanized C channel, steel Square tube, and Checkered plate.
	Column	Galvanized square tube.
	Ceiling	PVC Ceiling or sandwich panel ceiling or gypsum Board. Aluminium panel ceiling.
	Railing	Galvanized square tube.



ENGINEERING CASES DISPLAY :





SECURITY GUARD BOOTH

PRODUCT OVERVIEW :

New concept design, flexible window & door layout, fast transport, easy assembly and dismantlement. Using for security and police guard, coffs and fast food booth.

SANWA PREFAB TECHNOLOGY

Security Guard Booth

Specification	Color	Customized
	Roof/Bottom	Steel Sheet / Sandwich Panel EPS / Rockwool
	Ceiling	Color-Steel Sandwich Panel EPS / Rockwool
	Wall	PS. The sandwich material and the thickness could be chosen by customer.
	Color	Color-Steel Sandwich Panel
		PS. The sandwich material and the thickness could be chosen by customer.
	Door Frame	Aluminium Frame
	Door	Color-Steel Sandwich Door EPS / Rockwool
	Window	UPVS Window Frame with 5mm clear glass.
	Frame	Plywood with PVC Covering Floor or Laminate Flooring (can be chosen by customer)

ENGINEERING CASES DISPLAY :



SECURITY
GUARD BOOTH



Specification	Column	Double C Type Steel
	Wall	Color Steel Sandwich Panel
	Wind Resistance	Grade 10
	Features	Strong Structure, good-looking

ENGINEERING CASES DISPLAY :





REMOVABLE FENCING

B. Sandwich Panel Fencing

Sandwich panel removable fencing is one of our product that using the double C type steel such as the column and sandwich panel such as the wall, this feature is strong structure and good-looking.



Column	: Double C Type Steel
Wall	: Color Steel Sandwich Panel
Wind Resistance	: Grade 10
Features	: Strong Structure, good-looking

SANWA PREFAB TECHNOLOGY

Removable Fencing

ENGINEERING CASES DISPLAY :





INDOOR PURIFICATION ROOM

PRODUCT FEATURES:

S.P.T has the ability to independently complete entire purification projects and purification products, and has strict operating procedures and practices from design, planning and material procurement to manufacture and installation procedures to ensure the progress of a project and its quality, mainly serving many industries, like those of precision machinery, precision instruments, biomedicine, food and beverage, etc.



ENGINEERING CASES DISPLAY :



INDOOR
PURIFICATION
ROOM



SANDWICH PANEL

PRODUCT FEATURES:

Sandwich Panel are used in facades, partition walls and ceiling. The most typical applications include industrial, office and commercial buildings sports halls, warehouse and power plants. The panels are also suitable for food industry construction and demanding clean room applications.

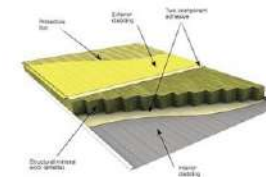
A. EPS



EPS Sandwich Panel is one of new building materials, it is composited by outer steel plate in both sides and the inner polystyrene, humified and pressed by computer- controlled machine and covered high strength glue on the surface.

Specification	Double Side Steel	0.2mm-0.7mm PPGL/PPGL STEEL/COLORBOND
	Painting	Nippon Painting 10 Years Anti-Rust
	Color	Based on RAL COLOR or as your sample requirement
	Core Material	6-20kg/m ³ EPS
	Core	50mm, 75mm, 100mm, 125mm, 150mm
	Popular for Using	0.6mm+10kg/m ³ 50mm EPS
	Popular for Selling	0.4mm+10kg/m ³ 50mm EPS
	Core Material Color	White

B. ROCKWOOL



Rockwool Sandwich Panel is applicable to the project which is fire protection with higher requirements. Rockwool fiber is vertical with metal decking. High density strip of rockwool are cross distributed along the panel, it make sure that there is good bearing for rockwool sandwich panel.

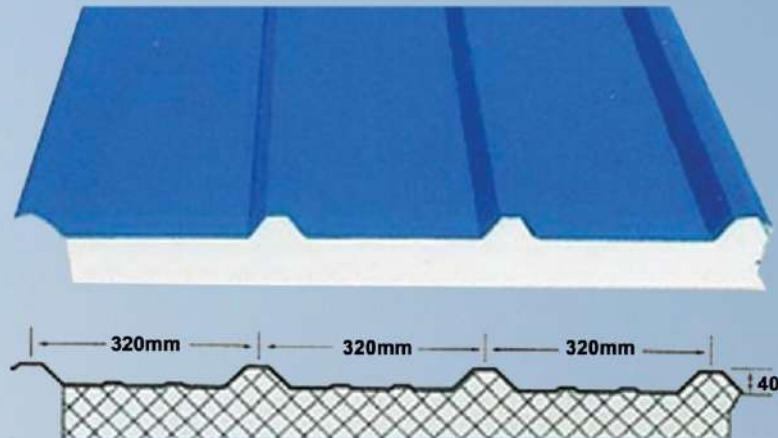
Specification	Double Side Steel	0.2mm-0.7mm PPGL/PPGL STEEL/COLORBOND
	Painting	Nippon Painting 10 Years Anti-Rust
	Color	Based on RAL COLOR or as your sample requirement
	Core Material	60-120kg/m ³ ROCKWOOL
	Core	50mm, 75mm, 100mm, 125mm, 150mm
	Popular for Using	0.6mm+80kg/m ³ 50mm ROCKWOOL
	Popular for Selling	0.4mm+60kg/m ³ 50mm ROCKWOOL
	Core Material Color	Dark Yellow



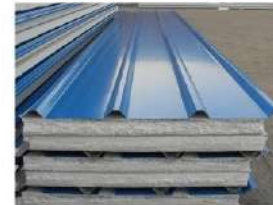
ROOFING PRODUCT

Sandwich Panel Roof

Sandwich Panel roof effective width is 950mm and 1050mm, good insulation and energy saving. 2 type that's EPS roof and Rockwool roof.

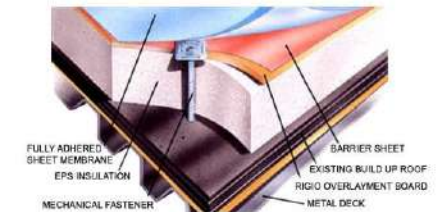


A. EPS

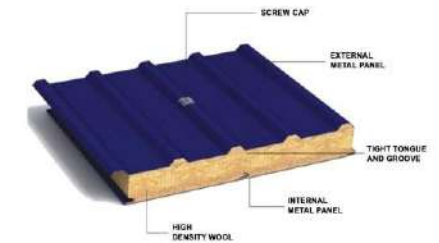
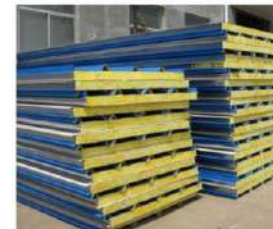


SANWA PREFAB TECHNOLOGY

Roofing Product



B. ROCKWOOL



Specification	Thickness	50mm
		75mm
		100mm
		150mm
	Width	200mm
		960mm
		11.9m
	Length	

ROOFING
PRODUCT



PROJECT REFERENCE

Cisauk Serpong Garden :



SANWA PREFAB TECHNOLOGY

Project Reference





Cisauk Bacing Plan :



Daan Mogot City :



Djarum Group :



Junchuan Group International Resources Co. Ltd :



Meikarta Lippo Cikarang :



PT. Sierad Produce Tbk - Chicken Farm



PT. Sierad Produce Tbk - Warehouse Tools & Mess Employee



PT. Hutama Karya Tbk



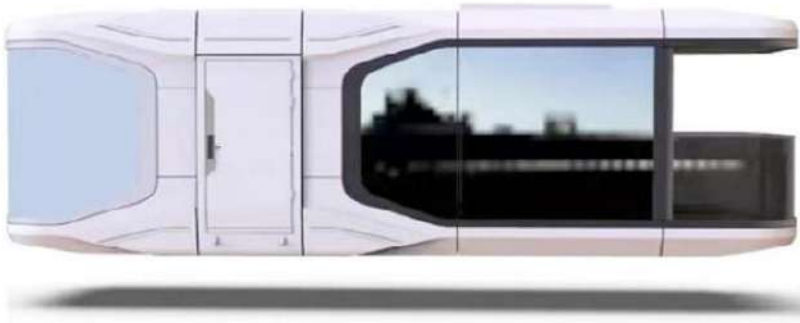


广厦房屋
GS HOUSING



GS housing and cultural tourism project development provides accurate and efficient solutions for scenarios such as scenic spot accommodation facilities, high-end camp rooms, resort hotel expansion, and B&B theme upgrades. Continuously carry out in-depth optimization of mobile accommodation units, provide customized production services, and tailor-make homestay systems for customers.

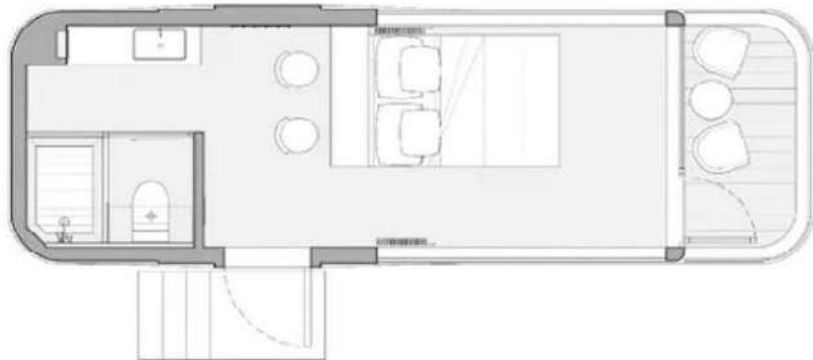
GS HOUSING E5



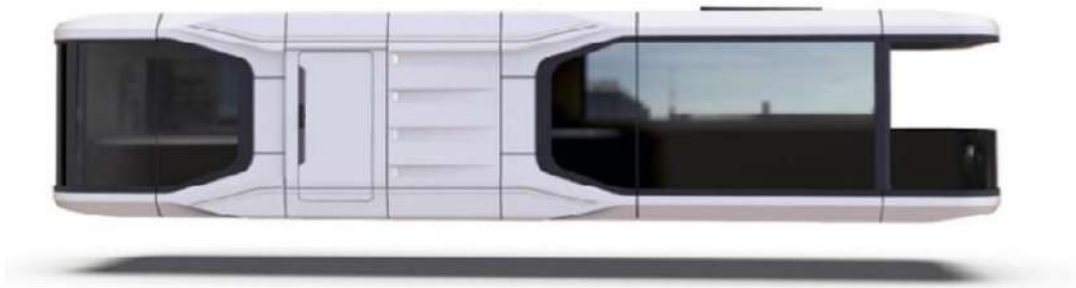
Size: L*W*H

L: 8.5 M **W:** 3.3 M **H:** 3.2 M

Building area: 28.0 m²



GUANGSHA E7



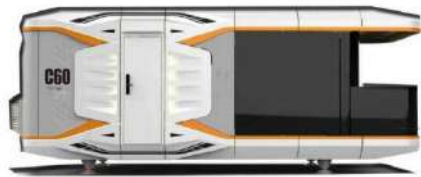
Size: L*W*H

L: 11.5 M **W:** 3.3 M **H:** 3.2 M

Building area: 38.0 m²



GUANGSHA C60



With panoramic balcony

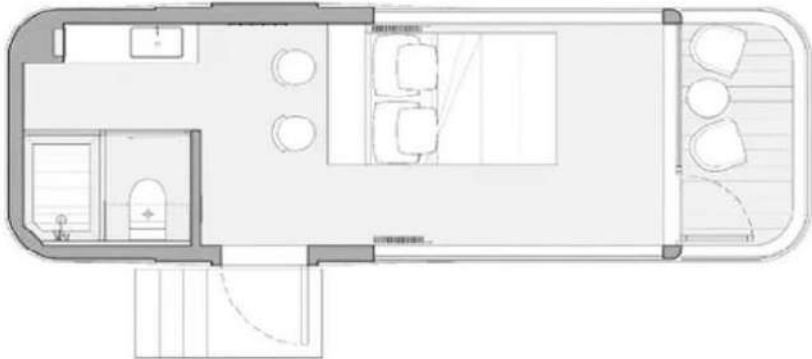


Fully enclosed without balcony

Size: L*W*H

L: 9 M **W:** 3.3 M **H:** 3.4 M

Building area: : 30 m²



GUANGSHA C90



With panoramic balcony



Fully enclosed without balcony



Size: L*W*H

L: 11.5 M **W:** 3.3 M **H:** 3.4 M

Building area: : 38.0 m²



PRODUCT FEATURE COMPETENCES

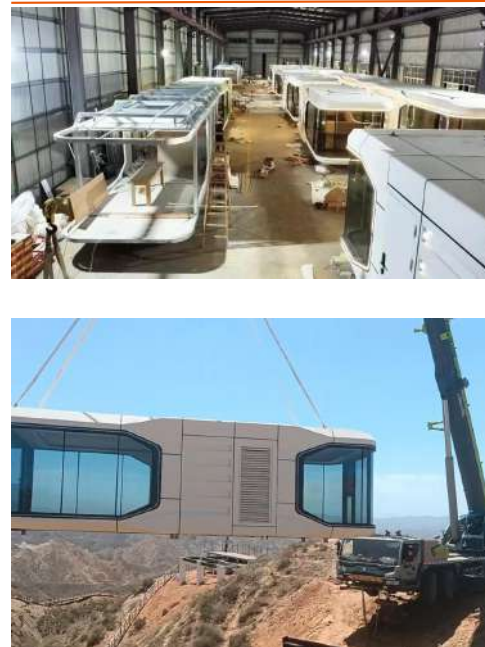
Ecological development regardless of terrain

No foundation is laid, the peaks, dense forests, and tidal flats are covered in all terrains, no plants or trees are destroyed, no construction waste is produced, and it is ecologically friendly.



Prefabricated houses quickly implemented

30 days of production in the workshop, integrated throughout the house Ready to use in 2 hours, no on-site construction or decoration required



Quality design attracts attention

100% original design, blended into the mountains and wilderness, The product comes with fan traffic



Panoramic view return to nature

270° panoramic floor-to-ceiling windows, thermal insulation
Sleep in the scenery and enjoy pure natural pleasure



PRODUCT FEATURE COMPETENCES



Transportation stage

The standard truck is a 13.5m long semi-trailer with a transport width of 3m. The height is no more than 4.2m and can be freely passed on highways across the country.

Hoisting stage

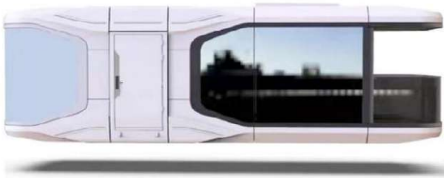
After the goods arrive at the site, customers need to contact the local crane service themselves. The lifting weight of the product is between 6 and 10 tons. It is recommended to use a crane of no less than 25 tons for loading and unloading.

Installation stage

Under the guidance of our technicians, we complete the on-site engineering of water supply, electricity supply, sewage pipelines and load-bearing foundations, and accurately place them at the designed installation points. After connecting water and electricity, we complete the water and electricity test and submit them to the customer for acceptance.

PRODUCT FEATURE COMPETENCES

E5 Space capsule Basic configuration list



Peripheral protection system

- Galvanized steel structural frame system
- Fluorocarbon sprayed aluminum alloy housing module
- Thermal insulation, waterproof and moisture-proof structural system
- Hollow tempered glass doors and windows
- Hollow laminated tempered glass skylight
- Stainless steel entry door
- Panoramic balcony

Customer control system

- Card power extraction/card power-off panel
- Multi-scene mode function panel lighting
- Intelligent integrated control of lighting/curtains
- Whole-house intelligent voice control
- Mobile smart access control

Indoor hardcover

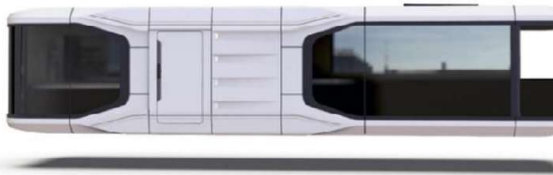
- Standard color integrated ceiling and wall modules
- Eco-friendly wooden flooring
- Bathroom privacy glass door
- Bathroom marble/tile floor
- Customized washbasin/basin/bathroom mirror
- Toilets/faucets/showers
- Bar counter
- Whole house lighting system
- Whole house water and electricity system
- 2P Midea variable frequency heating and cooling air conditioner
- Macro water heater

Additional items

- Double-layer insulation structure of wall
- Electric auxiliary floor heating
- Foaming at the bottom

PRODUCT FEATURE COMPETENCES

E7 Space capsule Basic configuration list



Peripheral protection system

- Galvanized steel structural frame system
- Fluorocarbon sprayed aluminum alloy housing module
- Thermal insulation, waterproof and moisture-proof structural system
- Hollow tempered glass doors and windows
- Hollow laminated tempered glass skylight
- Stainless steel entry door
- Panoramic balcony

Customer control system

- Card power extraction/card power-off panel
- Multi-scene mode function panel lighting
- Intelligent integrated control of lighting/curtains
- Whole-house intelligent voice control
- Mobile smart access control

Indoor hardcover

- Standard color aluminum ceiling
- Environmentally friendly wooden floor (special floor for electric floor heating)
- Bathroom privacy glass door
- Bathroom marble/tile floor
- Customized washbasin/basin/bathroom mirror
- Toilets/faucets/showers
- Whole house lighting system
- Whole house water and electricity system
- 2P Midea variable frequency heating and cooling air conditioner
- Macro water heater
- Wall color panel-160
- All wall color palettes - 120
- Fireproof scalding lock floor KMG03
- Curtains included as standard
- Ceiling small speaker/Xiaodu

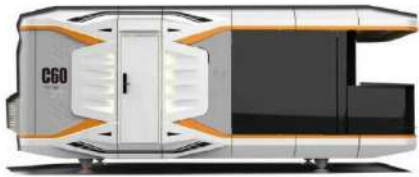
Additional items

- Double-layer insulation structure of wall
- Electric auxiliary floor heating
- Foaming at the bottom

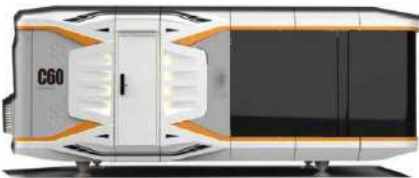
PRODUCT FEATURE COMPETENCES

C60 Space capsule

Basic configuration list



With panoramic balcony



Fully enclosed without balcony

Peripheral protection system

- Galvanized steel structural frame system
- Fluorocarbon sprayed aluminum alloy housing module
- Thermal insulation, waterproof and moisture-proof structural system
- Hollow tempered glass doors and windows
- Hollow laminated tempered glass skylight
- Stainless steel entry door
- Panoramic balcony

Customer control system

- Card power extraction/card power-off panel
- Multi-scene mode function panel lighting
- Intelligent integrated control of lighting/curtains
- Whole-house intelligent voice control
- Mobile smart access control

Indoor hardcover

- Standard color integrated ceiling and wall modules
- Eco-friendly wooden flooring
- Bathroom privacy glass door
- Bathroom marble/tile floor
- Customized washbasin/basin/bathroom mirror
- Toilets/faucets/showers
- Bar counter
- Whole house lighting system
- Whole house water and electricity system
- 2P Midea variable frequency heating and cooling air conditioner
- Macro water heater

Additional items

- Double-layer insulation structure of wall
- Electric auxiliary floor heating
- Foaming at the bottom
- Expanded panoramic balcony (including doors and windows)

PRODUCT FEATURE COMPETENCES

C90 Space capsule Basic configuration list



With panoramic balcony



Fully enclosed without balcony

Peripheral protection system

- Galvanized steel structural frame system
- Fluorocarbon sprayed aluminum alloy housing module
- Thermal insulation, waterproof and moisture-proof structural system
- Hollow tempered glass doors and windows
- Hollow laminated tempered glass skylight
- Stainless steel entry door
- Panoramic balcony

Customer control system

- Card power extraction/card power-off panel
- Multi-scene mode function panel lighting
- Intelligent integrated control of lighting/curtains
- Whole-house intelligent voice control
- Mobile smart access control

Indoor hardcover

- Standard color aluminum ceiling
- Environmentally friendly wooden floor (special floor for electric floor heating)
- Bathroom privacy glass door
- Bathroom marble/tile floor
- Customized washbasin/basin/bathroom mirror
- Toilets/faucets/showers
- Whole house lighting system
- Whole house water and electricity system
- 2P Midea variable frequency heating and cooling air conditioner
- Macro water heater
- Wall color panel-160
- All wall color palettes - 120
- Fireproof scalding lock floor KMG03
- Curtains included as standard
- Ceiling small speaker/Xiaodu

Additional items

- Double-layer insulation structure of wall
- Electric auxiliary floor heating
- Foaming at the bottom
- Expanded panoramic balcony (including doors and windows)

PRODUCT FEATURE COMPETENCES

Voice intelligent control module

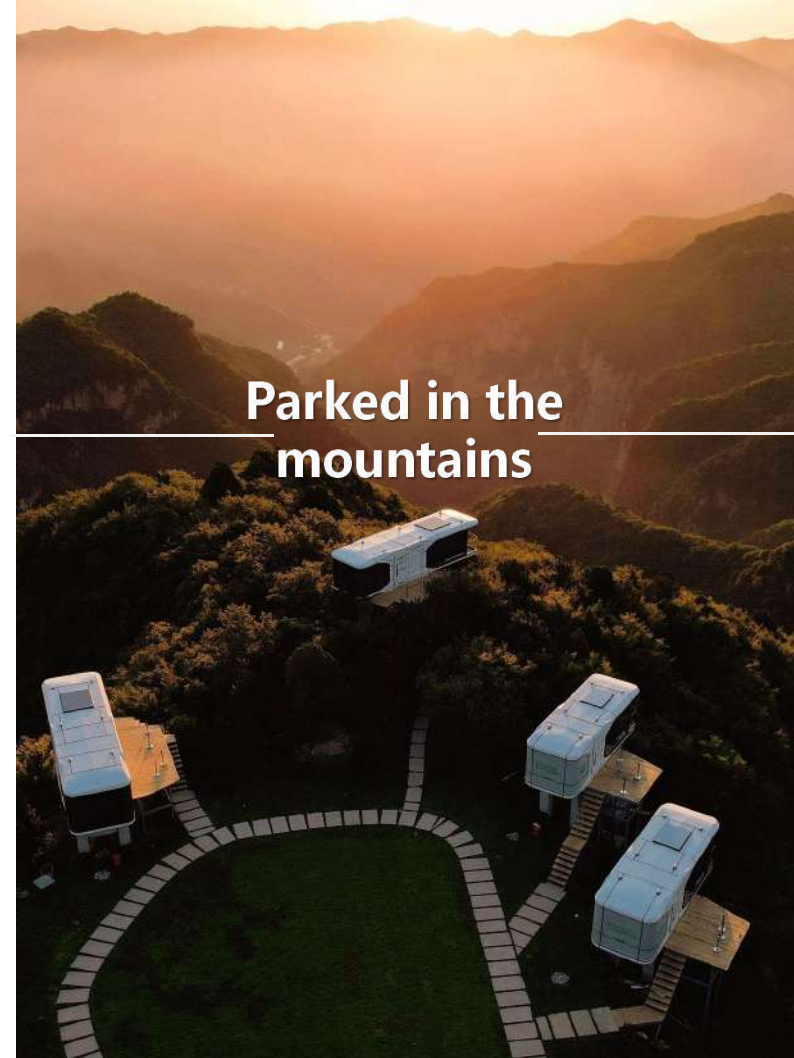
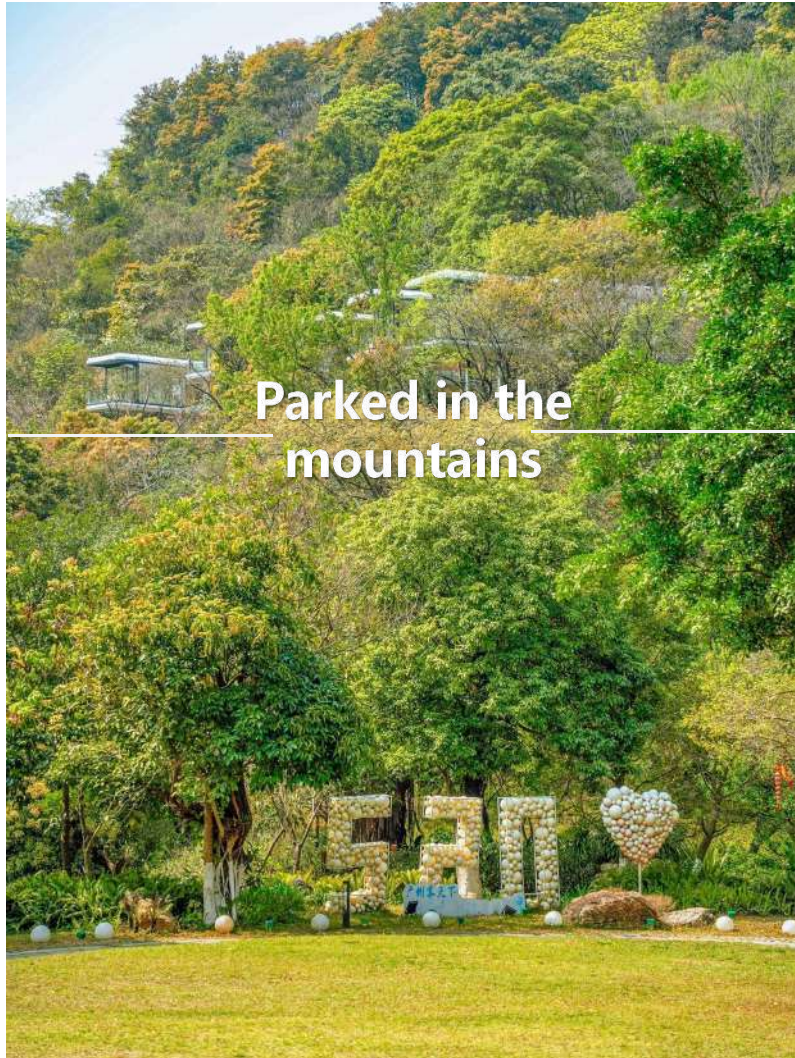
Bedroom curtains	Bedroom atmosphere light	Balcony light	Exterior light strip	Air conditioning control
Bedroom canopy	Bedside lamp	Aisle lights	Fresh air system	Smart controller

FACTORY AND PRODUCTION

The total area of its own factory is about 60,000 square meters, with a total of 150 standard production stations, and the monthly delivery volume can reach more than 150 units. The production team all have more than ten years of experience in the industry. They adhere to the production and management philosophy of product first and customer consideration. Each production and delivery process of the product is strictly controlled. Product quality and landing effect are the core purposes of Jingshu craftsmen.



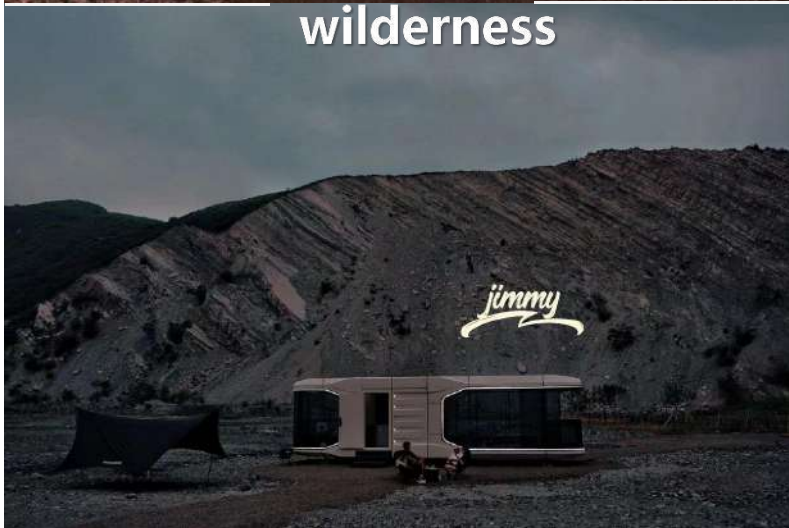
Application Scenario



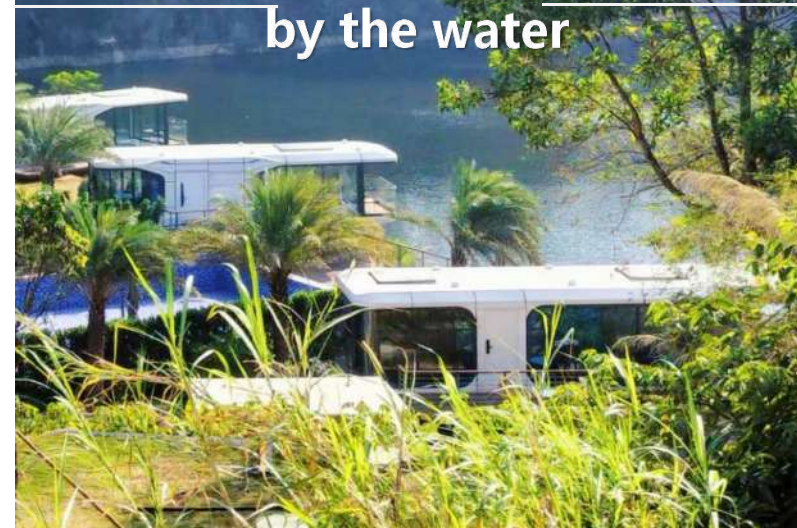
Application Scenario



Parked in the
wilderness



Moored
by the water



Application Scenario



Anchored
in ice fields



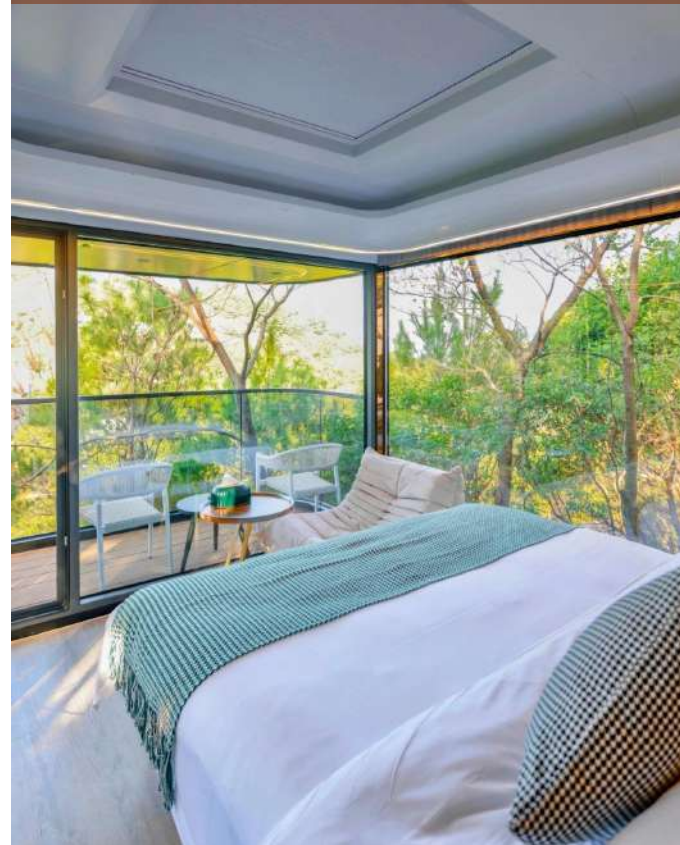
Parked
in Pingchuan

Room Interior Display

Living room - leisure space



Bedroom - resting space

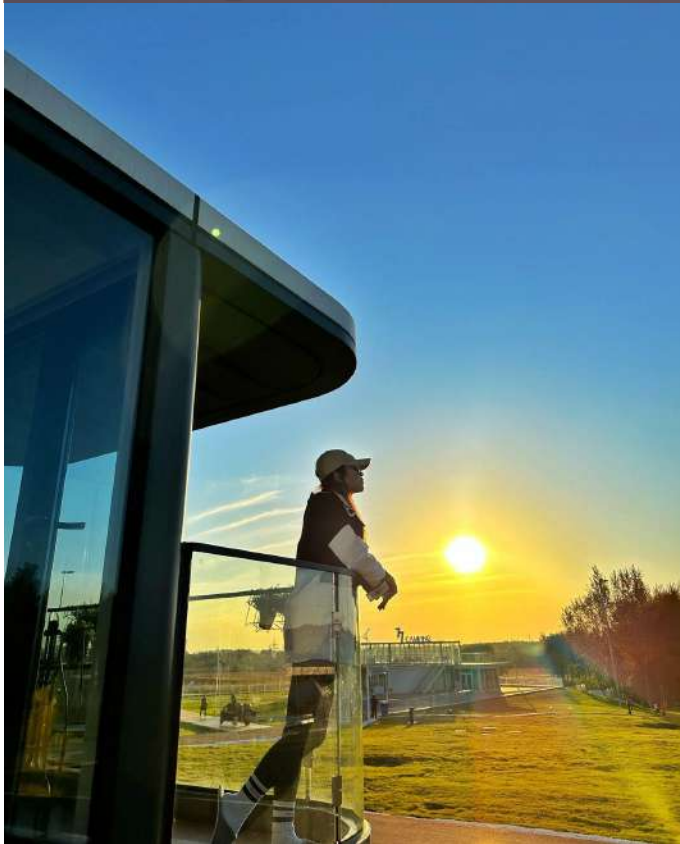


Bathroom - wet and dry separation



| Like The Scenery

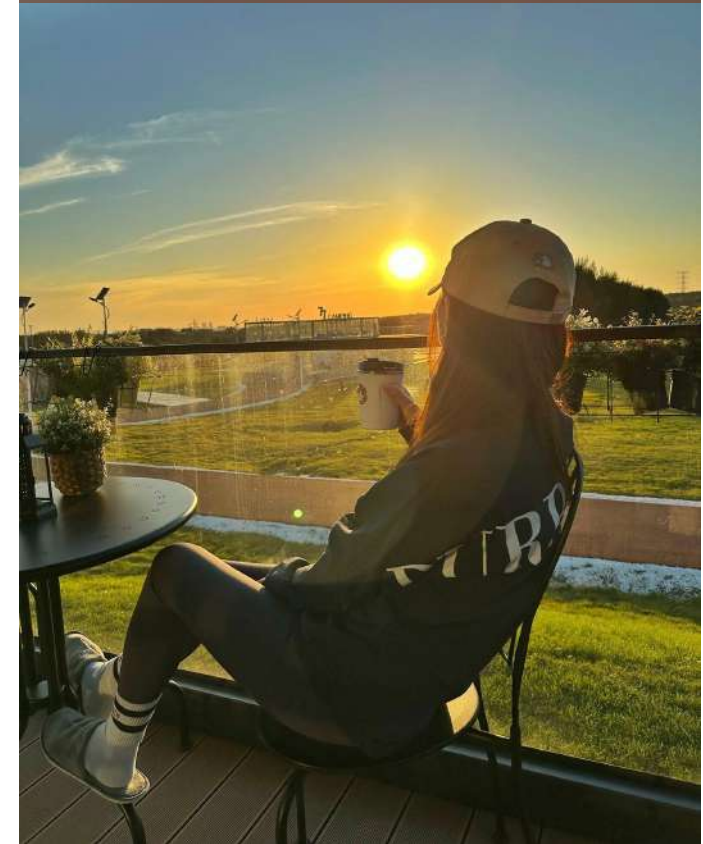
Leaning on the railing -
looking into the distance



Under the sunset -
take a break



On the terrace –
drinking tea



*TRAVEL STEADILY TO
REACH THE FUTURE*

LIFT HEAVY LOADS WITH EASE



ECONOMIC AND ENERGY SAVING

01~02



SAFE AND RELIABLE

03~04



SMART AND COMFORTABLE

05~06



CONVENIENT MAINTENANCE

07~08

ECONOMIC AND ENERGY SAVING



Classic engine, energy saving and reliable



Standard LED lamps, energy saving, more brighter, long service life



Load sensing steering and dual pump confluence technology, energy consumption reduce by 10%



SAFE AND RELIABLE



The independently developed gearbox has experienced nearly 30 years of technical innovation and market validation



TCast steel driving axle housing ensure reliable structure; Standard drum brake, wet brake as optional.



Rain test



Impact test of overhead guard



Frame type upper beam, more reasonable structure, enhance the rigidity and strength



Large diameter hydraulic pipe, Standard 24 degrees conical seal.



Optional configurations for safety: Three sides lights, Rear working lamps, Blue light, Extinguisher, Warning light, Reversing radar and camera.

SMART AND COMFORTABLE

The rubber hose is hidden behind the chain to achieve good front view.



Standard cup seat. Option USB connector



Ratchet type hand brake



Cabinet with lock



Electro-hydraulic direction changing device



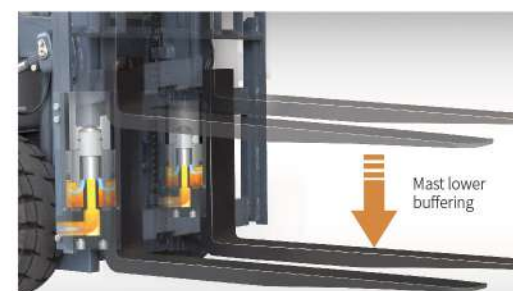
Integrated light switch

RELIABLE SPECIAL DESIGNED INSTRUMENT



Reliable special meter displays the whole truck's working condition, fault detect and other important information completely which makes the operator master the whole truck condition directly and conveniently.

*: Some model options.



Standard mast lower buffering, while lift buffering is fitted for full free mast to achieve better operation experience.



Standard semi-enclosed seat, which is more comfortable for drivers.



Large steering angle axle is equipped to get smaller turning radius.



The rear view is more larger by optimizing the structure of counterweight.

CONVENIENT MAINTENANCE



Large opening angle hood

Removable triangular side cover

Two-stages opening cabin door (optional)

80°

70



Floor board with checking hole, which is convenient to gearbox maintenance.



Standard 9 inch air filter with iron shell is helpful to extend maintenance period.



Integrated electrical cabinet, dustproof and waterproof, easy to check



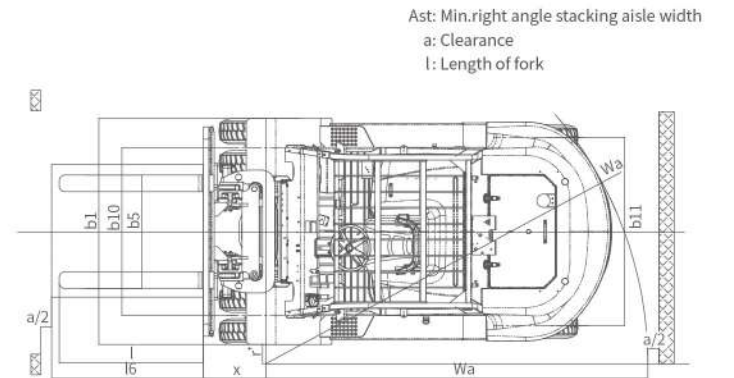
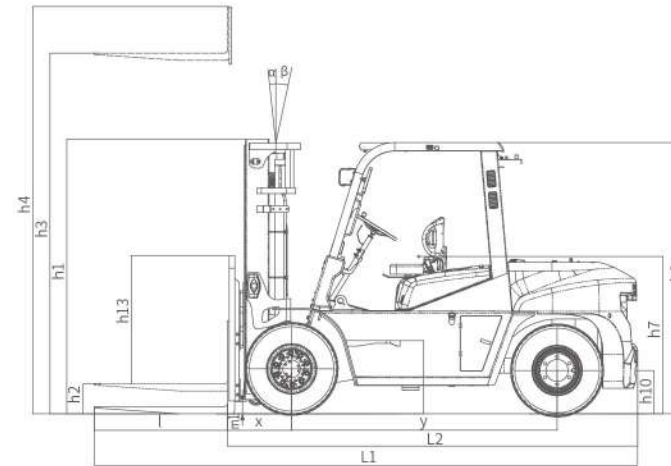
Radiator cover with supporting rod can open to 80 degrees. It is convenient to check.



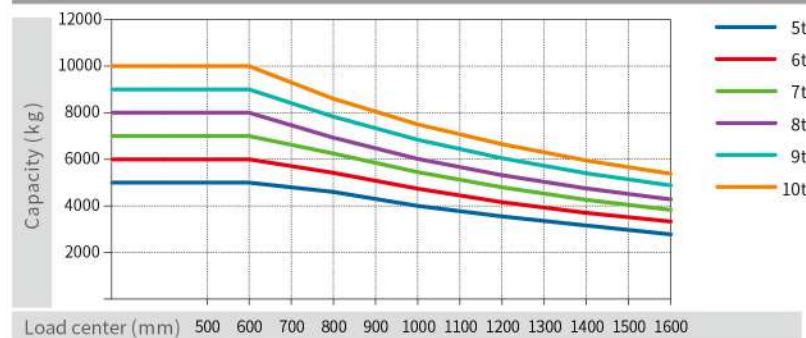
Standard steering axle cylinder sleeve, which is more reliable for harsh working condition. Reasonable grease fitting layout makes lubrication more easy.

MANUFACTURER AND TECHNICAL DATA

1.0	Manufacturer			HELI					
2.0	Model			CPCD50	CPCD60	CPCD70	CPCD80	CPCD90	CPCD100
3.0	Configuration number			W2K2					
Characteristics									
4.01	Rated capacity		kg	5000	6000	7000	8000	9000	10000
4.02	Load center distance		mm	600					
4.03	Power mode			Diesel					
4.04	Driving mode			Seat-type					
4.05	Front overhang	x	mm	575	580	585	695	685	700
4.06	Wheelbase	y	mm	2400			2400	2550	2850
4.07	Total weight		kg	8000	8570	9170	10040	11450	12300
Dimension parameter									
5.01	Mast tilt angle (forward/backward)	α/β	°	6/12					
5.02	Height (mast lowered)	h1	mm	2480			2547	2700	2850
5.03	Free lifting height	h2	mm	155	160	165	170	190	200
5.04	Lifting height (standard)	h3	mm	3000					
5.05	Max. height,extended (with backrest)	h4	mm	4400			4467	4250	4415
5.06	Height of overhead guard	h6	mm	2450			2510	2560	
5.07	Seat height relating to SIP (to ground)	h7	mm	1430			1490	1540	
5.08	Towing coupling height	h10	mm	390			450	475	
5.09	Ground clearance (between mast)	m1	mm	180			245	250	
5.10	Backrest height (Calculated from the surface of the fork)	h13	mm	1360	1350	1345	/	/	/
5.11	Overall length (with fork)	L1	mm	4770	4850	4890	5020	5180	5440
5.12	Overall length (without fork)	L2	mm	3550	3630	3670	3800	3960	4220
5.13	Overall width	b1	mm	2044			2124	2164	
5.14	Fork adjustable range (the external of the fork)(Max./Min.)	b5	mm	300-1845			370-1750	470-1990	470-2100
5.15	Fork size:thickness x width x length	s/e/l	mm	55x150x1220	60x150x1220	65x150x1220	70x150x1220	80x175x1220	
5.16	Tread, front	b10	mm	1520			1520	1600	1600
5.17	Tread, rear	b11	mm	1700			1700	1700	1700
5.18	Right angle stacking aisle width for pallet 1000 x1200mm crossways	Ast	mm	5230	5280	5350	5470	5740	6060
5.19	Min. outside turning radius	Wa	mm	3250	3300	3350	3400	3630	3940
Performance Data									
6.01	Travel speed (laden/unladen)		km/h	25/29	25/29	25/29	25/29	25/29	25/29
6.02	Lift speed (laden/unladen)		mm/s	500/530	500/530	500/530	450/480	390/420	330/350
6.03	Lowering speed (laden/unladen)		mm/s	WITHOUT LOAD≥300 WITH FULL LOAD≤600					
6.04	Max.drawbar pull (laden)		kN	60	60	60	60	60	60
6.05	Max.gradeability (laden/unladen)		%	35/20	32/20	30/20	38/20	25/20	20/20
Tyres									
7.01	Wheels,number front/rear (x=driven wheels)			4X/2					
7.02	Tyre type front/rear			Pneumatic-tyre					
7.03	Tyre size,front			8.25-15-14PR			8.25-20-14PR	9.00-20-14PR	
7.04	Tyre size,rear			8.25-15-14PR			8.25-15-14PR	9.00-20-14PR	
Combustion-engine									
8.01	Engine manufacturer/Moel			ISUZU 6BG1QC-02					
8.02	Rated power/Speed		Kw/rpm	82/2000					
8.03	Max. torque/Speed		Nm/rpm	415/1400-1600					
8.04	Cylinder number-bore x stroke		/L	6-105X125/6.5					
8.05	Fuel tank capacity		L	140					
Other									
9.01	Transmission type			Hydraulic transmission - mechanical shift(electro-hydraulic directional change optional)					
9.02	Transmission number of speed (fwd/bwd)			2/2					
9.03	Service brake			Powered brake-pedal type					
9.04	Parking brake			Mechanical-hand brake lever type					
9.05	Operating pressure for attachments		mpa	20.5			23	20.5	20.5
9.06	Battery voltage/Capacity		V/Ah	2X12/80					



Load curve



Note: The vertical axis stands for load capacity and the horizontal axis stands for load center which is calculated from the front surface of the forks to the gravity of the standard load,the standard load means a cubic with 1200mm edge length.When mast is tilted forward,using non-standard forks or loading large goods, the load capacity will be reduced.The load capacity of standard mast at different load center can be known from this load chart.

8T MAST PARAMETERS

Mast type	Mast model	Max.lifting height (mm)	Load capacity (lode center 600mm)(kg)	Height (mast lowered)(mm)	Free lift height (with backrest) (mm)	Service weight (kg)	Mast tilt angle α/β (°)
Wide View Standard Mast			CPCD80	CPCD80	CPCD80	CPCD80	CPCD80
	M220	2200	8000	2147	170	10136	6°/12°
	M250	2500	8000	2297	170	10174	6°/12°
	M270	2700	8000	2397	170	10201	6°/12°
	M300	3000	8000	2547	170	10240	6°/12°
	M330	3300	8000	2697	170	10279	6°/12°
	M350	3500	8000	2797	170	10305	6°/12°
	M375	3750	8000	2922	170	10338	6°/12°
	M400	4000	8000	3097	170	10471	6°/12°
	M425	4250	8000	3222	170	10503	6°/12°
	M450	4500	8000	3347	170	10536	6°/12°
	M475	4750	7850	3472	170	10569	6°/6°
Full Free 2-Stage Mast	M500	5000	7700	3597	170	10602	6°/6°
	M530	5300	7500	3797	170	10653	6°/6°
	M550	5500	7300	3897	170	10766	6°/6°
	M600	6000	7000	4147	170	10832	6°/6°
	ZM250	2500	8000	2277	1020	10096	6°/12°
	ZM270	2700	8000	2377	1120	10111	6°/12°
	ZM300	3000	8000	2527	1270	10141	6°/12°
	ZM330	3300	8000	2677	1420	10166	6°/12°
	ZM350	3500	8000	2777	1520	10196	6°/12°
	ZM375	3750	8000	2902	1645	10206	6°/12°
	ZM400	4000	8000	3077	1820	10311	6°/12°
	ZM425	4250	8000	3202	1945	10336	6°/12°
Full Free 3-Stage Mast	ZM450	4500	8000	3327	2070	10371	6°/12°
	ZM475	4750	7850	3452	2195	10391	6°/6°
	ZM500	5000	7700	3577	2320	10411	6°/6°
	ZM550	5500	7300	3877	2620	10561	6°/6°
	ZM600	6000	7000	4127	2870	10601	6°/6°
	ZSM360	3600	6700	2402	1100	10778	6°/6°
	ZSM400	4000	6700	2527	1225	10837	6°/6°
	ZSM435	4350	6700	2652	1350	10892	6°/6°
	ZSM480	4800	6700	2807	1505	10967	6°/6°
	ZSM500	5000	6700	2872	1570	10995	6°/6°
	ZSM540	5400	6500	3007	1705	11060	6°/6°
	ZSM600	6000	6100	3202	1900	11243	6°/6°
	ZSM650	6500	5500	3472	2170	11354	6°/6°
	ZSM700	7000	5000	3577	2275	11405	6°/6°

Note:1) 8t:free lift without backrest. 2) With internal sideshift, the lifting weight is reduced by 200kg.

CONTACT US



PT. TELAGA CAHAYA NUSANTARA



Makassar Office :

HRS Building 4th Floor

Jl. Karunrung No.23A Kota Makassar 90221

Telp. +62811 454669

Jakarta Office :

Jl. Raya Casablanca No. Kav. 88,
Jakarta Selatan - DKI Jakarta, 12870

E-mail :

info@tcn-corp.com

Contact Person :

Ardiansyah

+62 811 447 846

ardiansyah.tcn@gmail.com