



CONTENTS

FOREST	4–7	Structural Components,	
MEADOW	8–11	Other Structure, Facade	30-3
ISLAND	12-17	Interior design	32-33
Examples of module units		Pyörre house	34-3
2 x L, 3 x L, row houses,		2 x L module	36–3
multi storey solutions	18-25	3 x L module	38-39
Modern Methods of Construction	26	Furniture and interior solutions	40-40
Advantages of steel	27	Example of module	
Delivery	28-29	x MOD [M] details	44-4
		Liune door	46-5

As a material, steel is the best for such organic forms. It bends and implements all the comfort, durability, and eco-friendliness requirements throughout the building's life cycle. Thanks to its strength, steel is lighter in use compared to other materials and is 100% recyclable.

Steel is the toughest and most durable building material. Steel is classed as one of the most suitable materials for recycling due to its ability to be recycled time and time again without compromising quality or strength. In fact, the quality can be improved during recycling.

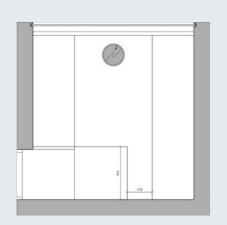
UNLIKE OTHER MATERIALS, STEEL CAN BE RECYCLED AT THE END OF THE BUILDING'S SERVICE LIFE.

✓ A-ENERGY CLASS (LOW U VALUE) ✓ 100-YEAR WARRANTY (NON ORGANIC MATERIAL) ✓ 100% RECYCLABLE (LIGHTWEIGHT AND STABLE) ✓ 100% REUSABLE (EASY TO WORK WITH)

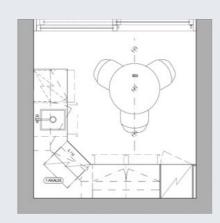




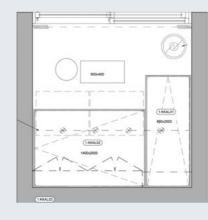
FOREST \approx X MOD [S]



SAUNA 8,8 m²



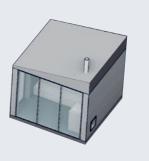
KITCHEN AREA 8,8 m²



LIVING AREA 8,8 m²

FOREST FACADE AND ROOF





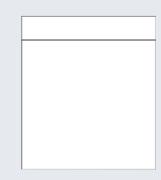




SHED TYPE ROOF

GABLE ROOF





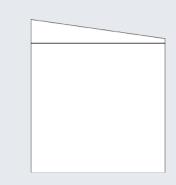




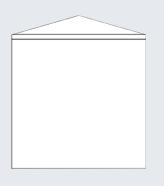
SHED TYPE ROOF 1

GABLE ROOF 1









SHED TYPE ROOF 2

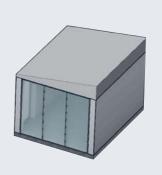
GABLE ROOF 2

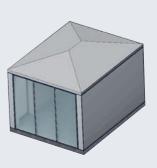


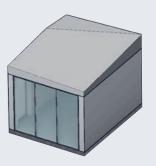


MEADOW FACADE AND ROOF









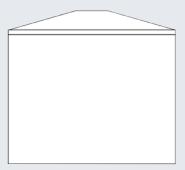
SHED TYPE ROOF

GABLE ROOF

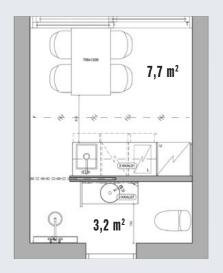


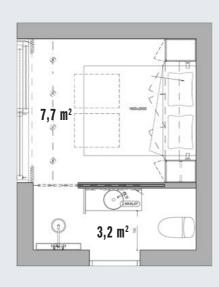


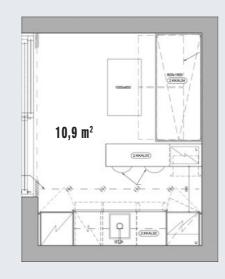




MEADOW = X MOD [M]

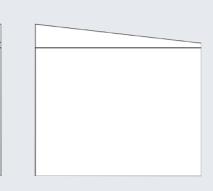




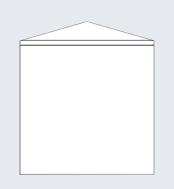


LIVING AREA & KITCHEN 10,9 m²

SHED TYPE ROOF 1







KITCHEN & WC 10,9 m²

BEDROOM & WC 10,9 m²

SHED TYPE ROOF 2

GABLE ROOF 2

GABLE ROOF 1

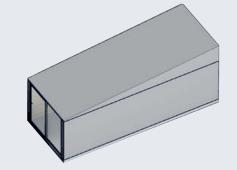


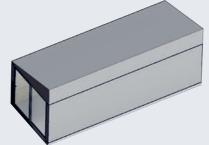




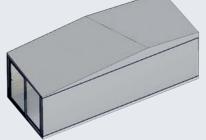


SHED TYPE ROOF









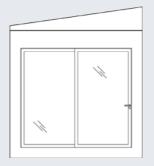
ISLAND \approx X MOD [L]

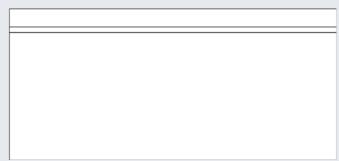
SHED TYPE ROOF 1





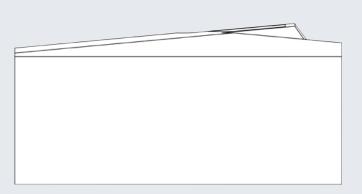
SHED TYPE ROOF 2





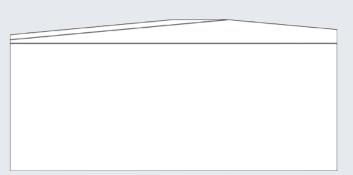
GABLE ROOF 1



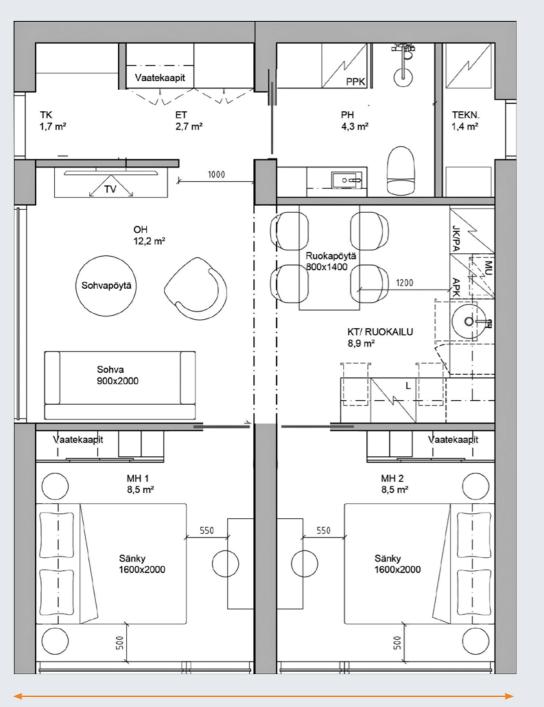


GABLE ROOF 2





EXAMPLE OF MODULE: DOUBLE UNIT X MOD [2 X L]



8020

6960

2 BEDROOM, LIVING ROOM, KITCHEN / DINING AREA, BATHROOM, SAUNA GROSS AREA 60,4 m², NET 51,7 m²



THE XMOD SYSTEM CAN ALSO BE USED TO CREATE LARGER ENTITIES BY CONNECTING SEVERAL INDIVIDUAL MODULES

Terraced houses are built from single apartment modules or, for more extensive apartment size requirements, from sets of 2/3xL module combinations. The XMOD range offers readymade apartment floor plans, e.g., 2xL or 3xL combinations.

The modules are relocatable and can be separated and converted into separate units. The XMOD system is also suitable for multi-storey construction. The load-bearing steel structure is fire protected, and the structure between the modules meets the required sound insulation requirements.

19

EXAMPLE OF MODULE: TRIPLE UNIT X MOD [3 X L]

10440



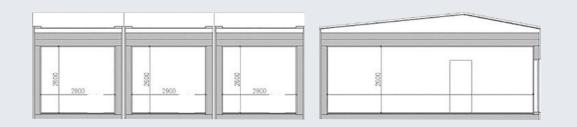
3 BEDROOM, KITCHEN, LIVING / DINING AREA, BATHROOM, SAUNA, 2 X TOILET

GROSS AREA 90,6 m², NET 79,9 m²



EXAMPLE OF MODULES: X MOD [ROW HOUSES]







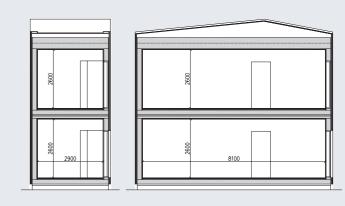
THE X MOD SYSTEM CAN BE USED TO FORM ROW HOUSES FOR DIFFERENT PURPOSES. SINGLE UNIT APARTMENTS, KINDERGARDENS, SCHOOLS, OFFICE SPACES OR HOMES FOR EVEN BIGGER FAMILIES.

2900	2900	2900 2900	2900	2900	2900

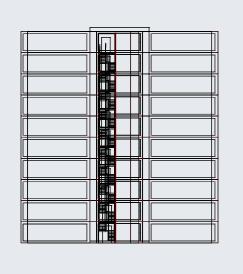


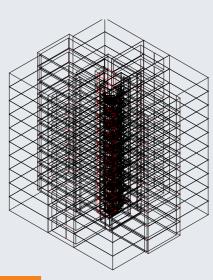
EXAMPLE OF MODULES: X MOD [MULTI STOREY SOLUTIONS]

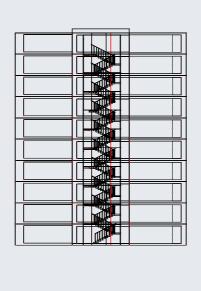


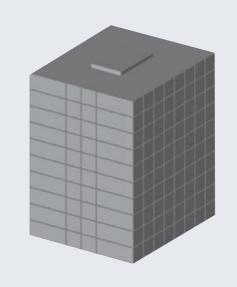


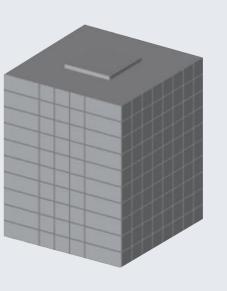


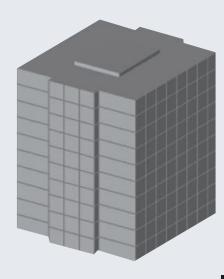












MODERN METHODS OF CONSTRUCTION

ADVANTAGES OF STEEL









All modules are assembled indoors in Aulis Lundell's production facilities and are ready to use after placing on the foundation and connected to utilities. All steel components are fabricated according to high-quality standards and accurate dimensions, and all elements and modules have precise small tolerance dimensions. Joining modules together is easy and requires no adjustment work at the site.

- Steel is a strong material, and the structures are resistant to all loadings. There are no deformations either during the transportation, liftings, or installations.
- The modules are relocatable without any significant repair work.
- The modules are healthy since deformations won't cause any defects or cracks. The room air stays clean, and there are no thermal- or water leakages.
- The structures will remain energy efficient.
- Steel is non-combustible and does not burn.
- Steel-structured buildings have a longer life expectancy.
- Steel provides light structures. Liftings are safe, and installation is faster and easier.
- Steel is fully recyclable and leaves no waste.

DELIVERY

MODULE FRAME	X MOD STANDARD	X MOD ++	X MOD +++
STRUCTURAL COMPONENTS • Floor, roof and wall elements • Supporting steel 2 STOREY SOLUTION	elements without finishing materials included *	water tight, boards installed installed	finishing materials installed installed
Intermediate floor MULTI STOREY SOLUTION Structural steel components	without finishing materials * included	boards installed installed	finishing materials installed installed
OTHER STRUCTURES • Roofing • Facades • Partition walls • Windows, doors, Liune sliding doors • Canopies, terraces 2 STOREY SOLUTION • Stairs	supporting steel profiles / trusses	installed installed installed ** **	installed installed installed installed installed
FINISHING MATERIALS • Floors, ceiling and internal walls	-	-	installed
FIXED FURNITURE, FITTINGS • Fixed furnitures, appliances, fittings • Fireplace, chimney *** • Sauna (interior, heater, benches) *** • Rainwater system, roof safety	- - - -	- - - **	installed installed installed **
HEVAC, PIPING, ELECTRICAL INSTALLATIONS • Installations, fittings	-	pipings installed	installed
DESIGN DRAWINGS	yes	yes	yes

^{*} can be delivered as separate prefabricated elements

^{**} according to an agreement

^{***} depending on the model type

STRUCTURAL COMPONENTS

ROOF ELEMENT:

- Thermo-profiles + thermal insulation + vapour barrier
- Battens, galvanised steel (room for electrical wiring)

EXTERNAL WALL ELEMENT:

- Battens, galvanised steel (ventilation)
- Windbreak, e.g., wood fibre board, membrane
- Thermo-profiles + thermal insulation + sheet metal (vapour barrier & bracing)
- Battens, galvanised steel (room for electrical wiring)

FLOOR ELEMENT:

- Gypsum boards (with electric floor heating, if applicable)
- Battens, galvanised steel
- Thermo-profiles + polystyrene insulation Supporting steel profiles (ground floor slab)

OTHER STRUCTURES

ROOF STRUCTURES:

- Roof boarding + roofing membrane or timber battens and metal roofing
- Supporting structures (trusses, beams), galvanised steel

EXTERNAL WALL CLADDINGS:

 As per the design, typically, e.g., profiled metal sheet, timber panelling

PARTITION WALLS (DRY WALLS):

- Gypsum boards
- Lightweight steel partition wall structure
- Gypsum boards

BATHROOM WALLS AND FLOORS:

 With applicable waterproofing membranes and finishing materials as per design

WINDOWS AND EXTERNAL DOORS:

- Negotiable, according to the design and the scope of works
- Windows, e.g., wood-aluminium, triple glazed
- Sliding terrace window, aluminium framed, triple glazed
- External doors, insulated, aluminium or timber doors

FOUNDATIONS

 As per structural design (steel piles/ screw piles and steel beams, concrete foundations and steel beams, frost insulation). Typically, by others.

ELECTRICAL INSTALLATIONS

 Wiring, junction- and switch boxes installed, fittings as per the design and the scope of works

PLUMBING, VENTILATION

As per design and the scope of works

HEATING

 Typically, electric floor heating is installed on the floor structures, connecting at the site

FACADE



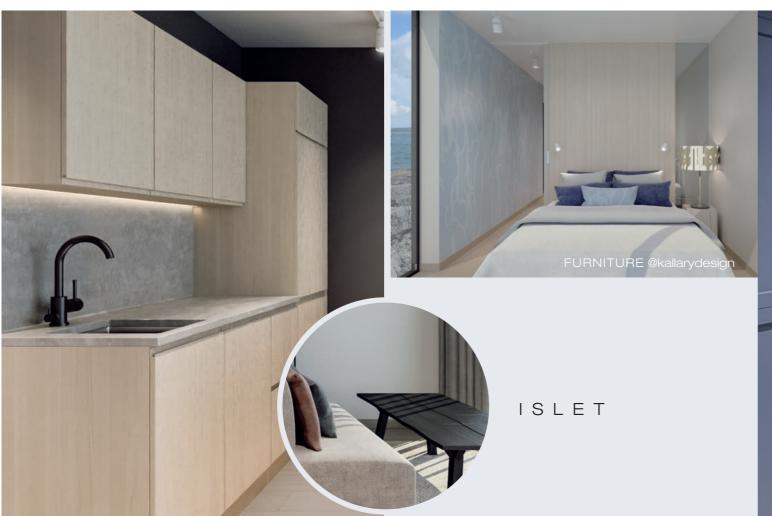
WOOD



STONE



METAL







LUNDELL HOUSE MODULE COLLECTION X MOD





INTERIOR DESIGN

INTERNAL DOORS

- Liune sliding doors (solid doors, bathroom door, glass doors, as per design)
- Liune turning doors

FINISHING MATERIALS

- As per interior design and the scope of works
- Flooring, e.g., parquet, laminate, vinyl flooring

- Wall finishing, e.g., boarding with painting, wooden panelling
- Ceiling, typically with panelling

FIXED FURNITURE

- As per design and the scope of works
- Could include kitchen cabinets, bathroom furniture, etc.

SUSTAINABLE STEEL CONSTRUCTION

40 Years of accumulated knowledge and innovation from Aulis Lundell Ltd was united the Pyörre-house, which was a huge step towards low carbon emissions and circular economy. Pyörre (eng. "Vortex") was part of a Green design -project, a low carbon emission building -evaluation of both the carbon handand footprint, and also an evaluation of the design criteria for adaptability, dismatability and recyclability of buildings.

FUTURE BUILDING AT ITS BEST!

LIFESTYLE CHANGE IN BUILDING; CIRCULAR ECONOMY AND LIGHTER STRUCTURES PROMOTE CARBON **NEUTRAL BUILDING.**

STEEL IS 100% RECYCLABLE AND REUSABLE.



STEEL IS THE STRONGEST AND LIGHTEST **BUILDING FRAME MATERIAL.** A STEEL STUD WEIGHS 60 % LESS THAN A CORRESPONDING WOODEN STUD.

> 80% OF THE MATERIALS CAN BE RECYCLED AND RESUSED.

FUTURE BUILDINGS HAVE TO BE DESIGNED FOR THE WHOLE LIFE CYCLE, INCLUDING THE DISMOUNTING.

LIGHT-WEIGHT STRUCTURES INCREASE THE EFFICIENCY AND THE LIFE CYCLE **QUALITY, AND MAKES IT POSSIBLE** TO REACH THE CLIMATE GOALS.

A GENUINELY UNBROKEN **RECYCLING CHAIN OF STEEL** MAKES IT SUPERIOR AND ETERNAL.



en.pyörre-talo.fi

HOW DOES PYÖRRE INFLUENCE THE CLIMATE?

Climate disadvantage Heating, electricity and repairs 35 000 kgCO_{2e} Demolition of building and recycling 19 800 kgCO_{2e}

Products and building 61 800 kgCO_{2e}

Carbon sink of garden and recycled concrete -4 200 kgCO_{2e}

Carbon stored in structures -14 000 kgCO_{2e}



Climate benefits



Recycling of products -79 000 kgCO_{2e}



FURNITURE AND INTERIOR SOLUTIONS

• ISLET • OAR • GRAIN • FIELD • PRIMEVAL • WILDERNESS

X MOD [2 X L] FACADE











FURNITURE AND INTERIOR SOLUTIONS

• ISLET • OAR • GRAIN • FIELD • PRIMEVAL • WILDERNESS

X MOD [3 X L] FACADE







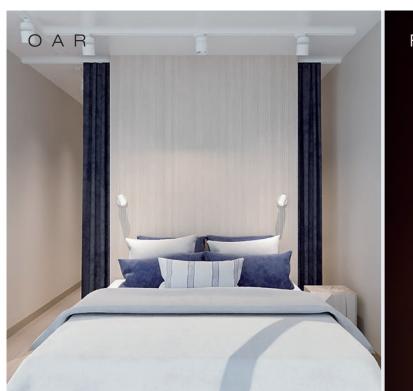




FURNITURE AND INTERIOR SOLUTIONS FOR ALL MODULES

- ISLET
- OAR
- GRAIN
- FIELD
- PRIMEVAL
- WILDERNESS







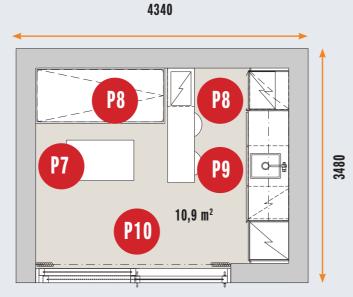




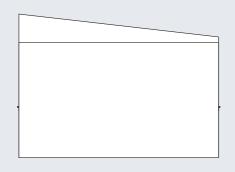
EXAMPLE OF MODULE

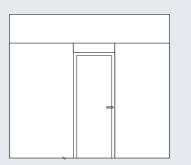
X MOD [M] DETAILS

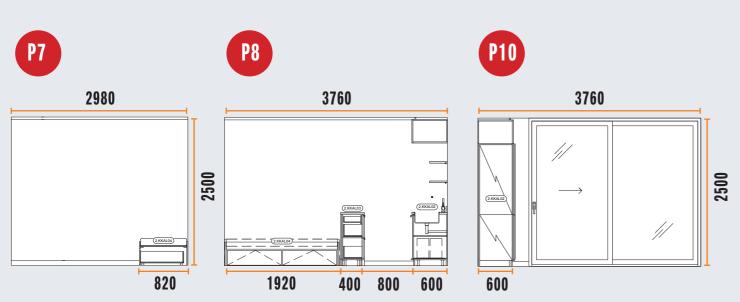


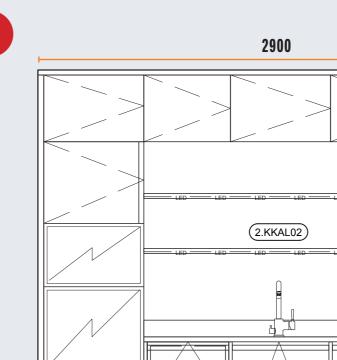


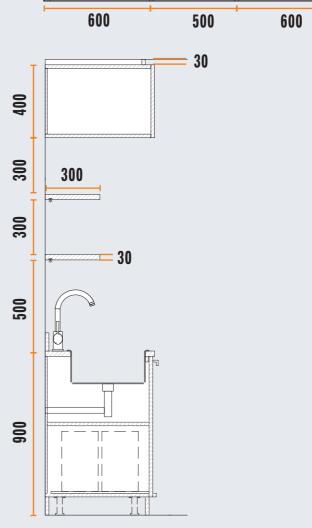


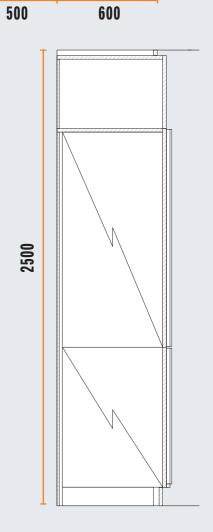












LIUNE DOOR

SINGLE AND DOUBLE LEAF DOORS, CORNER DOORS — LIUNE POCKET DOOR SOLUTIONS FOR EVERY PROJECT

SEE MORE

www.liunedoor.com









MORE ROOM WITH LIUNE

Liune Door brings comfort to your home, office and public spaces. Liune's comprehensive door selection includes high-quality solid doors, wet room doors, sauna doors, mirror and glass doors, technical doors, decorative doors and art and print doors.

The collection has been supplemented with new representative mirror doors as well as a modern Liune Stripe door, which can also be found in the hinged Liune Space door models.

MORE SPACE AND STYLE WITH LIUNE!





LIUNE ELEMENTS

The Liune partition door element is developed for professional builders and is the only pre-welded door element on the market. It is manufactured from CE-marked steel profiles and its indoor air quality classification is M1. Our element collection is extensive; we have designed elements to suit every particular space.

- 11 Frame depths starting from 75 mm and up. The elements include Liune quality standard rail.
- 2. Elements for every use, for glass doors or wet area elements, all of which include their required properties.
- The bottom of the elements include a reinforcing steel profile and the doors steering fen is pre-installed.





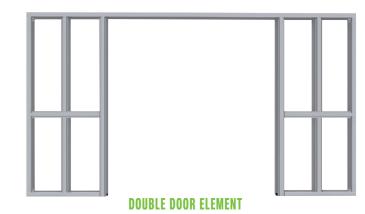








SAUNA ELEMENT REP



LIUNE-ELEMENT

- spaces for electrical conduit in standard delivery in all frame depths of 95–120 mm
- the element is delivered pre-welded and assembled, and ready for installation. Only the sliding rail, door leaf and covering iambs need to be attached on site.

GLASS ELEMENT

- spaces for electrical conduit
- the element is delivered pre-welded and assembled, and ready for installation. Only the sliding rail, door leaf and covering jambs need to be attached on site.

ELEMENT FOR WET AREA

- spaces for electrical conduit
- wet area splash collecting runner in standard delivery
- the element is delivered pre-welded and assembled, and ready for installation.
 Only the sliding rail, wet area door leaf and covering jambs need to be attached on site

SAUNA ELEMENT

- functional in wet spaces
- pre-welded element ready to install

RENOVATION ELEMENT

 spaces for electrical conduit renovation elements are supplied without the counter frame stud so that the space use for element installation is maximized

AUTOMATION ELEMENT

- in frame depths of 95–120 mm included in the standard delivery. Automation is switched on in connection with the other electrical work
- all parts of sliding door mechanism are already installed to the slide rail, the element is otherwise ready assembled for installation on the site.

CORNER ELEMENT

- Standard frame depth 95 mm
- Standard places for electrical wiring in the element
- The element is pre-welded and the three (3) parts are attached together on site.

DOUBLE DOOR ELEMENT

- Standard frame depth 95 mm
- Standard places for electrical wiring in the element
- The element is pre-welded and the three (3) parts are attached together on site.

THIS IS HOW YOU CHOOSE LIUNE

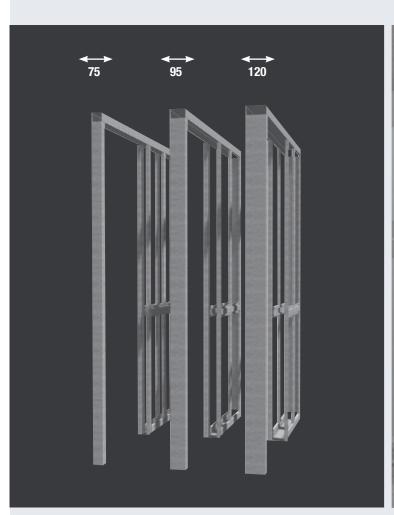
Frame Types of 75, 95 and 120 mm define the thickness of the frame structure. The size of the doorway frame type is selected on the basis of the intended use. The free opening for Liune size Li08 is 850 mm.

DOOR ABC

- 1. The Quick-frame element is assembled from two welded element parts.
- ▶ the installation is quick and easy.
- 2. The partition wall frame is ready
- ▶ the Liune element is lifted into place.
- 3. The base of the element is installed at the level of the finished floor surface.
- ▶ fix the element.

- 4. The element is covered with plaster boards by using the included screws.
- ▶ the wall surface can now be coated.
- 5. The coating is done.

 ▶ install the door leaf and the covering iambs with the included screws.





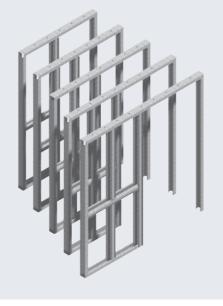
1. PARTITION WALL THICKNESS

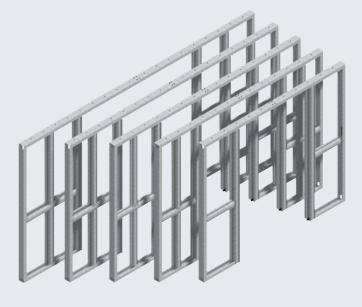
CHOOSE THE ELEMENT ACCORDING TO THE FRAME DEPTH 75 mm 95 mm 120 mm element

2. DOOR OPENING WIDTH

DOOR WIDTH (SINGLE LEAF) Lio8, Lio9, Lio10, Lio11, Lio12

DOOR WIDTH (DOUBLE LEAF) Lio8, Lio10, Lio12, Lio14, Lio16, Lio18, Lio20, Lio22







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