



Single-Storey Buildings

A flexible and complete solution

Index

page 4-5:	Tailor-made buildings
page 5:	CYPRION
page 6:	Steel structure
page 7:	Roof types
page 8:	Wall types
page 9:	Insulation, Mezzanines, Crane Rail Beams, Accessories
page 10-11:	Reference buildings



TAILOR-MADE BUILDINGS

Astron tailor-made Single-Storey Buildings (SSB) provide almost endless construction possibilities and offer architectural and building personalisation.

ASTRON SINGLE-STOREY BUILDINGS:

Lindab-Astron simplify construction in offering a pre-engineered metal building system for single-storey buildings. A reliable approach for fast turnkey construction primarily for non-residential buildings such as manufacturing plants, warehouses, commercial, sports centres, offices, transportation, garages and aircraft hangars all over Europe and beyond.

Astron buildings are flexible, allowing easy architectural integration of traditional building materials, such as brickwork, glazing, timber or light weight concrete.

Different roof and wall panel systems, in various combinations, allow you to create the building you want. Whatever the function of your Astron building is, it will be tailor-made to your needs.

AN ASTRON BUILDING INCLUDES:

- All primary and secondary framings
- Crane beams and rails
- Mezzanines
- Choice of various roof systems
- Choice of various wall systems
- Liner panels
- Integrated accessories
- Thermal and acoustic Astrotherm insulation



ADVANTAGES:

- Respect of architectural requirements and aesthetics
- Flexibility in the choice of building dimensions
- Clear spans up to 100m
- Various roof systems and various wall systems
- Fixed deadlines and budgets plus low running costs
- Easy extension and optimum use of space
- High performance thermal and acoustical insulation systems
- EN ISO 9001:2000 quality accreditation

CYPRION MANAGEMENT TOOL:

Lindab-Astron and its Builders use a proprietary integrated management tool for pricing and design from the initial project stage to shipment. CYPRION, Astron's specific calculation software not only calculates the cost and the weight of the building but also the transportation requirements, erection man-hours, crane time, foundation reactions and provides 2D as well as 3D views.

Valuable applications are linked to CYPRION:

CYPRION-ALLPLAN

A simple "double click" on CYPRION starts a graphics programme that instantly shows a 3D preview of the building as it appears in ALLPLAN. The Builder, therefore, can quickly and easily show his customer a realistic and interactive outside and inside view of the project, to see all the details and colours, to import the virtual building into the overall photo of the site etc.

DIAL-ASTRON

This daylighting autonomy application linked to CYPRION evaluates the percentage of time during which no artificial lighting is required inside a building. It is a powerful tool to determine the number of windows and skylights needed to optimise the illuminance level of the building.

e-techman

Lindab-Astron offer Builders an easy-to-use and rapid tool to access any or all of the Astron system technical solutions and to visualise, on-line, all the construction details of an Astron building.

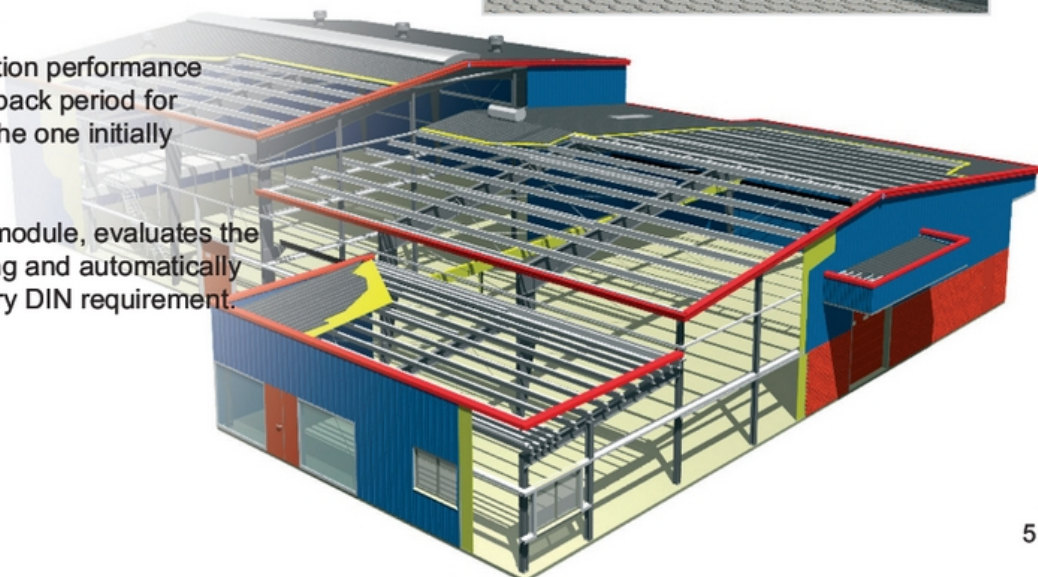
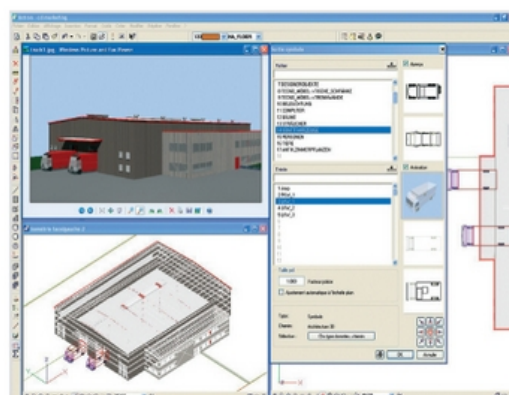
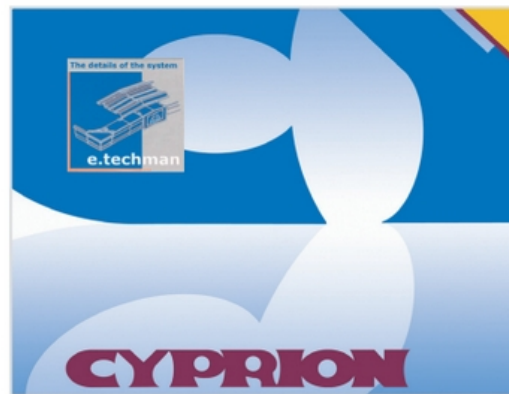
PARTS ORDER PLACEMENT

The Parts Order Placement interface offers a reliable and innovative solution to easily order Astron building elements on-line.

BUILDINGS ENERGY EFFICIENCY

CYPRION proposes a thermal insulation performance comparison tool to calculate the pay back period for investing in a thicker insulation than the one initially foreseen.

CYPRION, coupled with a heat loss module, evaluates the energy efficiency of the Astron building and automatically compares the results with the statutory DIN requirement.



STEEL STRUCTURE

The structure consists of columns and rafters made of welded or hot-rolled profiles, purlins and rails of cold-formed galvanized profiles.

PRIMARY FRAMING:

Primary framing consists of all the structural elements which transfer loads to the foundations.

Main frames consist of built-up welded primary framing members, including flange bracings, connection bolts and anchor bolts.

The bases of the intermediate frames are generally pinned, however, certain circumstances may dictate the use of fixed constructions.

Protection:

- All profiles are shot blasted to SA 2.5
- To afford protection during transportation and erection, all profiles receive a primer coat of 80 microns thickness, in either blue or grey colour.
- Optionally, corrosion protection paint can be provided, with a thickness of 100 microns.

SECONDARY FRAMING:

Secondary framing consists of the elements which support the roof and wall sheeting and which transfer loads to the primary framing:

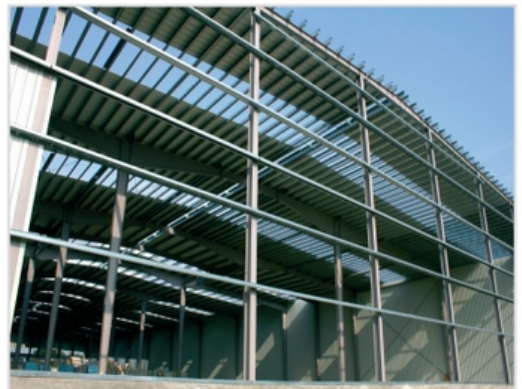
- Roof purlins
- Wall girts
- Framing of openings

Purlins and girts are galvanized Z profiles, produced by cold roll forming.

- Connections are made using galvanized bolts
- Framing of openings essentially consist of cold formed L, C, U or Z galvanized profiles.

ADVANTAGES:

- Aesthetical profile
- Optimum clear space
- Easy adaptation of the building in case of modification or change of building use
- Fast and easy erection
- Purlins are cable trays
- Secondary framing galvanized as standard



ROOF TYPES

Depending on building plans and regulatory or other requirements, different roof systems can be employed.

SCREWED DOWN ROOF:

LPR1000

Ribbed steel panels, externally fixed to the secondary framing with stainless steel self-drilling screws.

Weathertightness is achieved by pre-formed closures and tape sealants.

The LPR1000 is used in three effective systems:

- Single skin roof with or without Isobloc
- Single skin roof with bridge
- Double skin roof (inside panels plain or acoustical)



STANDING SEAM ROOF:

LMR600

Standing seam panels internally fixed to the secondary framing by special sliding clips, allowing free expansion and contraction, thus avoiding any stresses in the roof system.

The LMR600 is used in three effective systems:

- Single skin roof with and without Isobloc
- Single skin roof with bridge
- Double skin roof (with lower panels plain or acoustical)



SANDWICH ROOF:

POLAR

Composite, sandwich panel, consisting of galvanised, colour-coated steel inner and outer skins, encompassing an expanded CFC free polyurethane core.

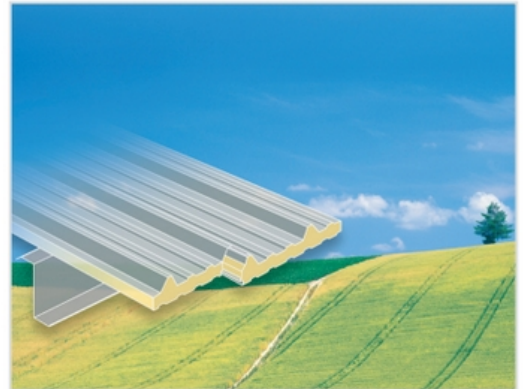
BUILT-UP ROOFS:

Multitec

Consisting of ribbed steel panels, fixed to the purlins. The roof includes all necessary parts to receive a built-up roof system with reduced roof slope (2-3%).

Spacetec

Purlin-free roof consisting of deeply corrugated steel panels fixed directly to the primary framing. It allows the application of various built-up roofs with reduced roof slope (2-3%).



ADVANTAGES:

- Perfectly adapted and designed to the Astron structure
- Simplified and fast erection
- Large range of integrated accessories
- Extensive range of colours and coatings
- High thermal and acoustical performances



WALL TYPES

Various Astron steel panels for building plans and architectural requirements of the façade can be employed. All can be combined together as well as with traditional materials such as stone, wood or glass.

LPA900 / LPD1000:

Vertically installed ribbed steel panels fixed to the secondary framing with self-drilling screws with composite nylon heads, colour matching the sheeting.

The LPA900 / LPD1000 are used in three effective systems:

- Single skin wall with or without Isobloc
- Single skin wall with spacer bridge
- Double skin wall with internal sheeting
(as an option, acoustical panels are available)

SINUTEC:

Horizontally installed sinusoidal steel panels fixed to a vertical substructure connected to the secondary framing with self-drilling screws.

POLAR:

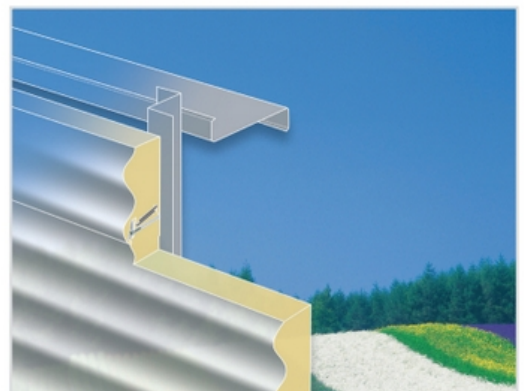
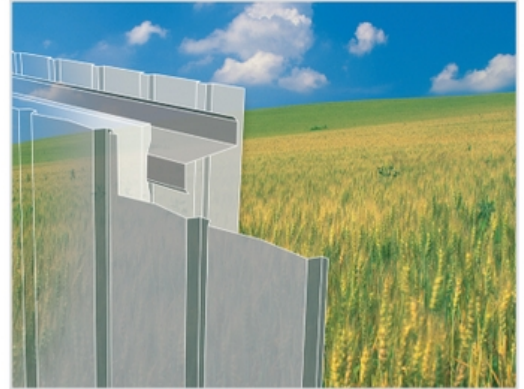
Vertically installed sandwich panels fixed with nylon-head screws or hidden fasteners to the secondary framing.

SINUTHERM:

Horizontally installed sandwich panels fixed to a vertical substructure connected to the secondary framing by means of self-tapping screws, which are hidden in the longitudinal overlaps.

CASSETTE:

Horizontally installed liner cassette panels fixed directly to the exterior flange of the portal frames. The outside cladding can be erected vertically or horizontally.



ADVANTAGES:

- Different wall panels for different architectural aspects
- Horizontal or vertical profiles
- All flashings and connecting parts
- Large range of integrated accessories
- Extensive range of colours and coatings
- High thermal and acoustical performances
- Optional inside sheeting to hide secondary structure



INSULATION, MEZZANINES, CRANE RAIL BEAMS, ACCESSORIES

Astron insulation, mezzanines, crane rail beams and accessories complete the Astron building package. All these additional elements are designed to fit into the Astron building system.

ASTROTHERM INSULATION:

It consists of a flexible fibre glass blanket laminated to an integral vapour barrier facing. Adaptable to LPA900, LPD1000 and SINUTEC walls and to LPR1000 and LMR600 roofs. The different facings provide an attractive finish to the interior of the building. This cost effective insulation concept ensures high acoustic and thermal performance.

MEZZANINES:

Mezzanines are an important feature of many industrial and commercial/retail buildings, both to suit requirements of modern stocking and storage techniques and to maximise the efficiency of machinery layouts and production flows. While they can be tailored to any building, judicious planning of mezzanine requirements early in the conception of a new facility can significantly improve the cost/performance ratio of the construction.

CRANE RAIL BEAMS:

Perfectly adapted crane rail beams can be integrated in the Astron structure. They are designed for various crane types and loads.

ACCESSORIES:

The large range of accessories is specially developed to ensure perfect integration with each Astron panel system. Truck doors, personnel doors, windows, translucent panels, sky domes, smoke vents, circular vents, monovents, liner panels, framed openings, louvers, roofjacks...

ADVANTAGES:

- Astrotherm insulation is tailor-made to the Astron roof and wall systems
- Crane rail beams and mezzanines benefit from a single-source supply and a single-source design
- Perfectly integrated accessories ensure quick and easy installation, optimum functionality and clean and tight integration





6 out of 40,000 Astron reference buildings





www.astron.biz



Astron is the brand name of the products sold by the Building Systems Business area of the Lindab group, Europe's largest manufacturer of steel building systems for industrial, office and commercial use.

Lindab-Astron produce up to 1,000 buildings a year, distributed either through a network of 400 certified independent Builders, spanning nearly 40 countries or through our Key Accounts Unit. Our headquarters is located in Diekirch (Luxembourg). Lindab's concept is clear and simple:

We simplify construction

Lindab-Astron:

<http://www.astron.biz/contact/Astron.html>

Luxembourg:

Route d'Ettelbruck
L-9230 Diekirch
Tel.: +352 80291-1
Fax: +352 803466

Czech Republic:

Kojetínská 71
CZ-75053 Píseň
Tel.: +420 581 250 222
Fax: +420 581 250 205

Hungary:

Derkovits u. 119.
H-4400 Nyíregyháza
Tel.: +36 42 501 310
Fax: +36 42 312 029

Russia:

ul. Sovetskaya 69
RUS-15003 Yaroslavl
Tel.: +7 4852 42 70 43
Fax: +7 4852 42 70 43-115

Germany:

Wilh.-Theodor-Römhild-Str. 32
D-55130 Mainz
Tel.: +49 (0)6131 8309-00
Fax: +49 (0)6131 8309-20

Poland:

ul. Kolejowa 311
Sadowa
PL-05-092 Łomianki
Tel.: +48 (0)22 489 88 91
Fax: +48 (0)22 489 88 98

France:

20, r. Pierre Mendès-France
Torcy, CEDEX 01
F-77202 Marne-la-Vallée
Tel.: +33 (0)1 6462-1616
Fax: +33 (0)1 6462-1092

United Kingdom:

Evans Business Centre
Mitchelston Ind. Estate
GB-Kirkcaldy, Fife
Scotland KY13 1UF
Tel.: +44 1592 65 23 00
Fax: +44 1592 65 31 35

Russia:

14G, Magistralnaya str.
Building 1
RUS-123290 Moscow
Tel.: +7 495 981 3960
Fax: +7 495 981 3961

Ukraine:

Saksaganskogo Str. 123
office 3
UA-01032 Kiev
Tel.: +380 44 490 6164
Fax: +380 44 490 6759

Romania:

Soseaua de Centura nr. 8
Stefanestii de Jos
RO-077175 Ilfov
Tel.: +40 21209 4100
Fax: +40 21209 4124

Italy:

Via S. Martino Solferino 40
I-35122 Padova
Tel.: +39 333 3286388
Fax: +39 049 658367

Bulgaria:

Str. «Captain D. Spisarevski» №38
BG-1592 Sofia, Drujba 1
Tel.: +359 2 979 97 00
Fax: +359 2 979 97 01

Belarus:

pr-t gazety "Prawda", 11
BY-220116 Minsk
Tel.: +375 29 311 44 59
Fax: +375 17 270 38 95

Lithuania:

Mokslininkų g. 20
LT-08412 Vilnius
Tel.: +370 5 272 97 29
Fax: +370 5 272 97 30