

Opening New Horizons



■ Customizable Roof Platforms ■ Special Designs ■ Engineering Services

www.webasto-marine.com

Reach new horizons for marine roofs with advanced Webasto technologies!

Webasto stands for comfort on the move. Webasto Marine Comfort stands for the perfect climate on board every boat or yacht. The wide product range includes BlueHeat heating solutions, BlueCool air conditioning systems, integrated BlueComfort solutions providing heat or cold on demand and last but not least sophisticated roof solutions providing light and fresh air on board.

High quality automotive technology and experience

For a pleasant stay on board, light and air are essential components. Webasto offers high-quality roof systems to provide passengers with the best possible comfort on board. We match our competence and knowledge acquired during 50 years of automotive experience with the latest marine requirements to provide customers and OEMs with top-quality solutions for their boat or yacht.

Affordable, customizable platforms

Webasto offers solutions for every demand. Our customizable platforms in various sizes, curvatures, designs and weight classes give shipyards and naval architects a great pool of options to choose from. Our 60 Series is ready-to-be-mounted when it is delivered to the customer, thus saving the shipyard time and money. With the 80 Series, Webasto offers shipyards

a completely dedicated frame design fitting the shipyard's panel design. The 150 Series is a fully integrated, double curvature roof consisting of a moving panel and an optional fixed panel.

Engineering Services for exclusive projects

On demand, Webasto even goes further in offering completely tailor-made solutions, via its Marine Engineering Services. In this know-how exchange concept Webasto roof experts work together with the shipyard's marketing, design and engineering teams throughout the different phases of the project. The result is a unique exclusive product fully integrated into the design of new boats. Shipyards profit not only from Webasto's engineering expertise, but also from its testing and manufacturing skills.

Webasto provides the perfect roof solution for every boat!

There is always a Webasto solution for your roof project!

Webasto Marine Roofs – our Customizable platforms:

- Robust, pre-developed platforms benefiting from Webasto's worldwide technological leadership in automotive sunroofs
- Possible customization in size, curvature, material and colour to fit your special needs
- Benefit from a product customized to your needs with no development costs involved and in a very short time frame
- Two platforms (flush integrated or top-mounted) for unlimited design possibilities

| | |
|-------------------------------|------|
| Design Options / Image | ** |
| Low Development Costs | *** |
| Short Project Leadtime | **** |



Webasto Engineering Services – add value to your boat and brand image:

- Unique, exclusive roof systems to match your exact specifications
- Phased project approach: limited risk, possible exit at any stage
- Joint teams and know-how transfer
- Customer involved at every stage
- Opportunity to use Webasto engineering skills and manufacturing capabilities for high-quality results

| | |
|-------------------------------------|------------------|
| Design Options / Image | ***** |
| Development Costs / Leadtime | Project Specific |
| Short Project Leadtime | *** |



Webasto Marine Roof Platforms: the 60 Series sliding roof

Glass Panel with slight curvature



Glass Panel with slight curvature in open position

The easy, ready-to-be-mounted solution!

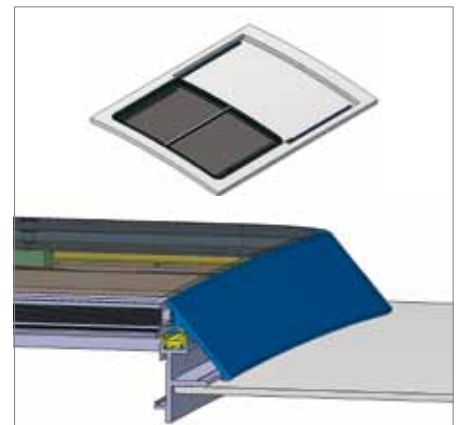
The 60 Series offers multiple customization options for a perfect fit. The roof is delivered fully tested, pre-assembled and ready-to-be-mounted at the shipyard thus resulting in significant cost savings for the boatbuilder.

4 Steps to customize your roof:

1 Top mount or flush integration:

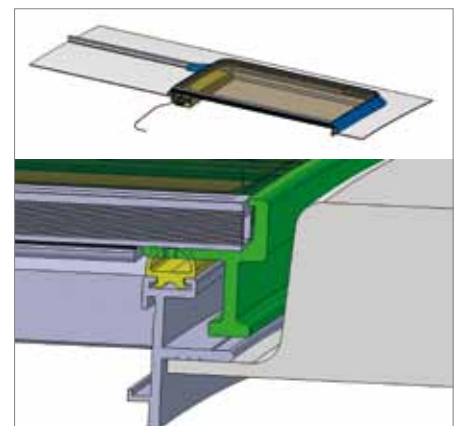
Top mount

- Fully watertight closing
- Very large opening
- Smooth automotive style mechanism
- Simple to install
- Matches hatch design
- Retrofit possible



Flush integration

- Opportunity to bring the deck to the same level as the sliding panel
- Rear rails are located completely to the side of the roof
- Fully watertight closing
- Very large opening
- Smooth automotive style mechanism



2 Select the required size and curvature:

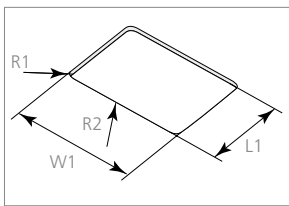


Figure 1

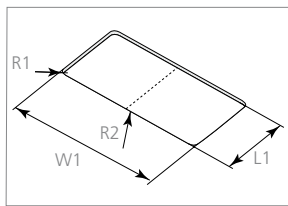


Figure 2

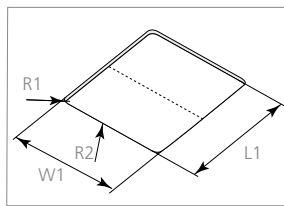
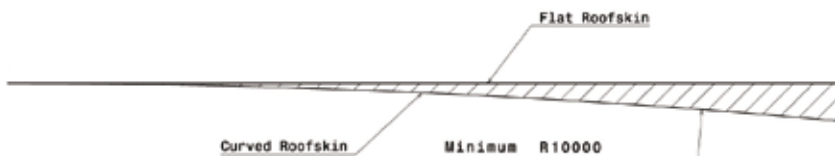


Figure 3

| Maximum Cut-Out size dimensions for our customized roofs | | max. length (L1) | max. width (W1) | corner curvature (R1) | min. cross curvature (R2) |
|--|---|------------------|-----------------|-----------------------|---------------------------|
| Figure 1 | Roof without cross beam | 1,100 | 1,100 | 80 | 7,500 |
| Figure 2 | Roof with cross beam in sliding direction | 1,100 | 1,800 | 80 | 7,500 |
| Figure 3 | Roof with cross beam perpendicular to sliding direction | 1,500 | 1,100 | 80 | 7,500 |

Remark: All dimensions are in mm.



3 Select the design:

Panel design

- PMMA / acrylic
- Glass
- Non-transparent
- Teak

Frame design

- Anodised
- Coated
- Coloured in all available RAL colours

4 Add options:

- Fixed panel
- Sunblind / fly screen

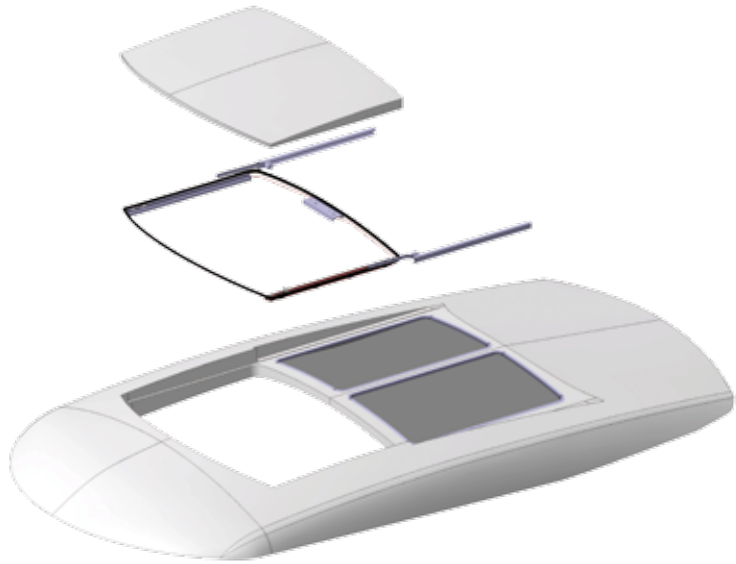


60 series with fixed panel



Sunblind / fly screen

Webasto Marine Roof Platforms: The 80 Series



Integrated extra-large roof design

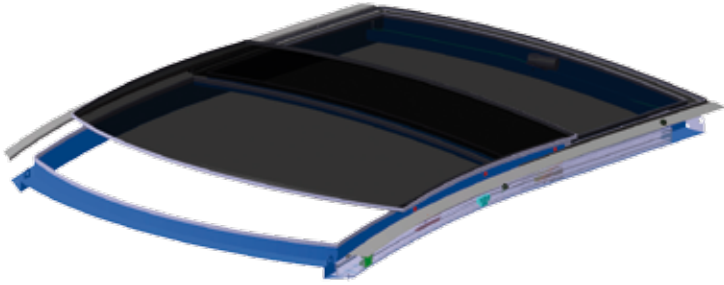
With the 80 Series, Webasto offers shipyards a completely dedicated frame design fitting the shipyard's panel design.



The frame construction is supplied as a module which facilitates the installation on board. This innovative roof development approach requires application engineering and close cooperation between the shipyard and Webasto.

- Frame design is dedicated to the yacht
- Panel design to be defined by shipyard, limited only by the maximum panel weight of 80 kg
- Supplied as a kit, including the frame, mechanism and sealing as well as rear rails.
- Fully watertight sealing system
- Tilting at front side (ventilation) and sliding to the rear
- 12 V DC drive system
- Integrated roof design
- Cross-curvature is possible (starboard to port side)
- Several possibilities for panel material

Webasto Marine Roof Platforms: The 150 Series



Exclusive double-curvature roof models

The 150 Series of roof solutions by Webasto is the perfect solution for demanding roof projects. The fully integrated roof consists of a moving panel and, optionally, a fixed panel. The double curvature allows extraordinary design possibilities.



The 150 Series is supplied as a complete system. The frame design is dedicated to each yacht. Application engineering and close cooperation between the shipyard and Webasto is required.

- Maximum weight of the moving panel is 150 kg
- Frame design dedicated to each yacht
- Supplied as complete functional system
- Fully watertight sealing system
- Tilting at rear side (ventilation) and sliding to rear
- 24 V DC drive system
- Double curvature (front to aft, starboard to port side)
- Panel material can be glass or sandwich
- Application engineering required

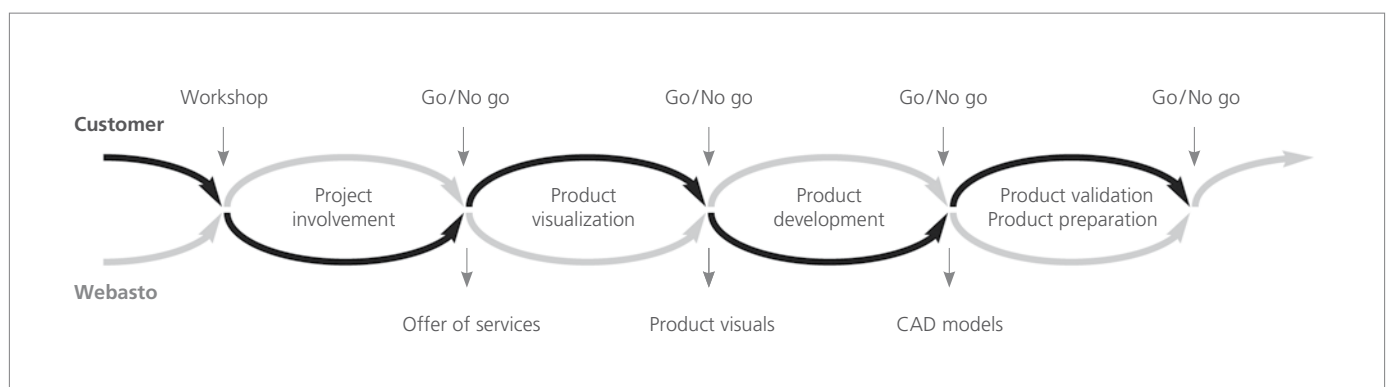
Marine Engineering Services

We can do a lot more for you:

- As the worldwide leader in automotive sunroof and convertible systems, Webasto can offer you uniquely Customized roof solutions for your boat or yacht.
- Large moveable surfaces of all kinds and sizes are our mission.
- Among our customers are the top players of the automotive industry such as Ferrari, Porsche, Volvo and Ford.
- We bring your ideas to reality and guarantee high quality and outstanding production know-how.
- Webasto offers manufacturing at full series-quality levels: process-orientated assembly operations, from the pilot line through the design check to series production.

The success of our projects stands on three basic elements:

- **Phased project approach allows frequent evaluation and limits the customers' risk**
- **Joint teams require strong customer involvement (marketing, R&D, manufacturing) at every stage**
- **Highly valuable know-how transfer ensures best outcome of the project investments**



The three project phases for a successful outcome:

1 Product visualisation

Activity:

Translate ideas into visual concepts

- Input (of customer)
- Ideas out of workshop
- CAD data of customer
- Application of product
- Technical requirements
- Technical constraints

Deliverables

- Visuals of product ideas
- Basic product description
- Functionality / test specs
- Technology / materials
- Indication of piece price and investment
- Detailed offer for phase 2



2 Product development

Activity:

Translate visual into technical concept

- Evaluate various concepts
- Customized adaptation of semi-standard products
- Creation of technical solution
- Solutions to constraints

Deliverables

- CAD presentation of product concept
- Translation of functions into technical solutions
- Translation of constraints into technical solutions
- 3D CAD models
- Updated cost price and investment
- Detailed offer for phase 3



3 Product validation

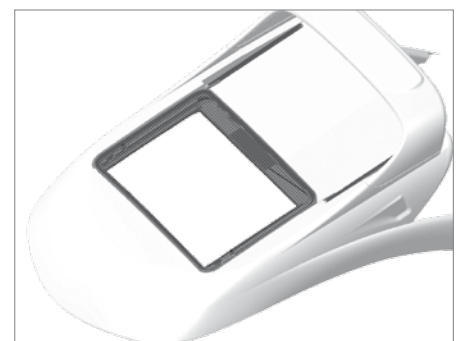
Activity: Prepare drawing

package for suppliers and assembly

- Product update
- Review 3D model
- Make changes
- Possibility to test prototypes

Deliverables

- Design failure mode and effect analysis (D-FMEA)
- Updated 3D CAD models
- On request: prototyping and testing
- Detailed offer for production



Webasto Marine Roofs

Some References

Arcoa Mystic 60' – Webasto Marine Roof 80 Series

Dimensions (length x width):
240 cm x 180 cm
GRP Panel



Jeanneau NC 11 – Webasto Marine Roof 80 Series

Dimensions (length x width):
127 cm x 253 cm
Glass Panel



*Azimut 40S –
Webasto Marine Roof
80 Series*

Dimensions (length x width):
220 cm x 210 cm
GRP Panel with 2 Acrylic Windows



*Maritimo Yachts –
Webasto Marine Roof
60 Series*

Dimensions (length x width):
110 cm x 180 cm
Standard Acrylic Panel



For more references, please contact us!

Webasto, a feel good climate – worldwide



Whether OEM or aftermarket: our products improve the comfort in vehicles. The name Webasto stands for innovative, economic and environmentally sound heating, cooling and ventilation systems for cars, commercial vehicles, motorhomes and boats. Our success is based on our wide range of products and high quality standard. An outstanding network of dealers guarantees top quality fitting and services around the globe.

We have been setting standards in technology for over one hundred years and are now amongst the 100 biggest suppliers to the automotive industry world-wide. Webasto operates in two business units: Convertible, Roof & Body (CRB) systems as well as Global Comfort Solutions (GCS) for heating, cooling and ventilation systems.