



PREFABRICATED BATHROOMS

Cost-effective
and timesaving solutions





Industrialisation of bathroom production

Sintef Byggforsk and most of the major contractors on the building market published a report in August 2008 on the industrialisation of the building industry. Amongst the products which attracted a lot of attention were bathroom cabins, which were deemed to undoubtedly be the most industrialised unit used in building at this time.

Norac AS has been in this market since the 1970s with regard to prefabricated bathrooms for ships and the offshore industry. We started production of bathrooms for the building market in 2005, initially at Ringeby in Norway, and in Lithuania in 2006.

Sintef Byggforsk has been a constant participant in the testing of bathrooms and methods. Norac AS has all the approvals and certificates required for supplying components to the building market. The new Norwegian building act has been strengthened and the documentation requirement made stricter. Norac AS produces in Lithuania according to the requirements of the Norwegian act. To ensure documentation and traceability in relation to the product, we buy most of our components in Norway, which also makes communication with suppliers easier if there are any quality problems with the goods we use in our production.

DSB (the Norwegian Directorate for Safety and Fire) sets the standard for electrical installation planning, which components are approved and the competencies required of the installer. Only approved installers can sign off the declaration of compliance and its appendices. Planning piping and the work involved also has to be planned and performed by professionals with the right approvals and competencies.

Technical approval through NBI is the benchmark for production, which means that Norac AS follows the guidelines of the approval.

«Norac has shown its determination and ability to supply a good end-product, and I thank them for constructive cooperation.»

Steinar Frøyen, Stalstunet - Beitostølen

Operations Manager at AS Valdresbygg (a member of the Veidekke group)

During this period, we have supplied several thousand bathrooms to the Norwegian market. During the building boom, high volume, fast turnover techniques were refined to meet demand. 80% of the products we supplied went to the Oslo area.

New solutions and designs

In the current market conditions, we are highly aware of the need to look to the future, and develop a new generation of bathrooms able to meet the new requirements of developers and customers.

We develop exciting solutions which give consumers a bathroom which meets expectations of a <designer bathroom> where necessary.

We work closely with existing customers to gain feedback on what they find particularly satisfactory and where there are grounds for improvement. We use such feedback to determine how we can build the bathroom of the future. We have also worked in close consultation with some of the major contractors ever since we started production and gaining first-hand experience from the industry continues to be our main source of inspiration.

Quality to the fore

Production on an industrial scale makes controlling and adjusting quality easier. We gain operators who specialise in their own work and logistics can be better adapted to production which takes place indoors, in light, pleasant premises. The result is more efficient working.

Focus on logistics

It is important to Norac AS that we can provide logistics for contractors which meet the requirements for punctuality demanded by the building process. Norac supplies marine products all over the world and land-based units are part of this system. Weekly transport between Norway and Lithuania gives us the advantage of flexibility, which makes us efficient from procurement to delivery.





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- 01. There is a noticeable increase in demand for upgraded solutions which give builder and end-customer exactly what they want.
- 02. Bathrooms supplied to Studio H in Kvitfjell where they wanted a bathroom with a high standard.
- 03. Standard bathroom with white tiles supplied to the Grefsenlyst project, Oslo.
- 04. Design elements can be used in tiling to turn an ordinary bathroom into a designer bathroom. It all depends on the desire and willingness to use high-profile elements.
- 05. A simple, stylish bathroom at Base Camp, Kvitfjell. This apartment block has many quality features and elements in the apartments and in the bathrooms, as the photo clearly shows.
- 06. High quality interior furnishing details selected for the Grefsenlyst project in Oslo give the bathroom a quality stamp of approval.
- 07. Tile colour scheme and design complement the fixtures and fittings.



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TECHNICAL DATA

Contract signing

To ensure good procedures in relation to customers and technical implementation of projects, our broad approach is as follows:

An order is often based on drawings made by potential customers, preferably giving clear specifications. Based on this sort of enquiry, Norac AS compiles a quotation. We aim to respond to enquiries as quickly as possible by sending an email to confirm that we have received it, and when we will respond. If the quotation is of interest to the customer, it can result in an order.

We then hold a technical meeting with the customer to ensure that all the details have been covered for planning and engineering, resulting in plan drawings.

We ask for written approval from the customer on all technical details based on the relevant rules.

We then start the procurement process which forms the basis of production and delivery time.

Technical review

Our bathrooms are built on a base section with a steel frame to reinforce the structure and for lifting the unit into place on-site. Reinforcement is built into this frame which forms the base for the concrete floor frame, including cables and earthing. The steel frame forms the basis for the outer walls.

- The concrete base and frame normally include a shallow drain depression, door and cable conduits. A membrane and then tiles are laid on the floor section.

- Documentation photo/checklists/measurements are compiled for each unit from start to finish of the production process to maintain quality control and traceability.
- The assembly process starts with the installation of walls. Steel panels are screwed to the base frame until all the walls meet technical specifications for fitting and installing the fixtures and fittings, electricity and plumbing.
- The ceiling is fitted allowing for any ceiling-mounted installations.
- Primer, membrane, water pipes with collars and tile adhesive form the basis for tile-laying.
- The next operation is installing the non-halogen corrugated electric pipes and Sanipex plumbing pipes.
- Once grouting and cleaning is complete, the bathroom is ready for installation of electrical components, sanitary fixtures and trimmings according to specification.
- Pressure and electrical testing along with quality assurance procedures ensure that we can supply according to industry standards and customer requirements.
- Bathroom cabins are packed and labelled according to specified procedures which ensure that the bathroom reaches its customer safely.
- An inspection will be performed on arrival and documentation completed for each delivery to prevent damage caused by storage and transport as much as possible.



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Approved
by the NBI