CuproBraze specialist in the radiator industry
Eighty years of innovation

Finnradiator is an expert in the design and production of both copper and aluminium radiator solutions for heavy-duty off-road vehicles, trucks and buses. The company’s history goes back to 1926, when three innovative, Finnish tinsmiths launched a business to produce radiators for automobiles. Finnradiator’s expertise is based on decades of experience in designing and producing radiators from copper/brass, and aluminium.

Finnradiator has always looked for ways to build better and more durable radiators in an environmentally friendly way. That is why the company joined the CuproBraze Alliance and has actively developed this radiator technology. For example, the OneShot method, which significantly increases production speed and radiator durability, is a result of Finnradiator’s product development. CuproBraze production is environmentally friendly because the raw material is recyclable, and it consumes less power and less chemicals than other radiator production methods.

Finnradiator offers its customers the latest radiator technology, which improves the performance and durability of heavy-duty vehicles. The size of our company is optimized for flexible planning and production, which makes us an ideal partner for niches such as the mining industry.

Finnradiator is an ideal partner for customers who require radiators with utmost durability and flexible, customised production.
Durability

Finnradiator is a forerunner in next Generation CuproBraze heat exchangers
CuproBraze takes engine performance to a new level.

**TENSILE STRENGTH**

CuproBraze products are extremely well suited for harsh and hot conditions. The tensile strength of copper is 8 times higher than that of aluminium at room temperature and 9 times higher at 260 °C.

**SHOCK AND VIBRATION RESISTANCE**

CuproBraze products have at minimum 2.6 times stronger joints than aluminium or soft soldered copper/brass products. CuproBraze works extremely well in conditions where radiators are subject to strong vibration and shocks.

**CORROSION RESISTANCE**

Corrosion in CuproBraze radiators is slower and more even than in aluminium radiators, making their performance much more predictable. The life cycle of CuproBraze products is much longer due to their higher corrosion resistance.

The copper content of the brass used in CuproBraze radiators is 85%, while that of soft-soldered products is 65-70%. This more noble alloy makes CuproBraze products resistant to dezincification, resulting in higher resistance to stress corrosion cracking.

CuproBraze has proved its corrosion resistance in SWAAT, marine atmosphere, salt spray tests, and also in demanding field conditions.

- ✔ SWAAT
- ✔ Marine atmosphere
- ✔ Salt spray

<table>
<thead>
<tr>
<th>Material</th>
<th>Tensile Strength at Room Temperature (MPa)</th>
<th>Tensile Strength at Elevated Temperature 260°C (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminium</td>
<td>40</td>
<td>31</td>
</tr>
<tr>
<td>Copper</td>
<td>330</td>
<td>270</td>
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</tbody>
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**Tests**

<table>
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<tr>
<td>SWAAT</td>
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</tbody>
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Performance

Exceptional durability, scalability, and performance
CuproBraze technology enables the production of more efficient, durable, and environmentally sustainable radiator solutions.

**MINIMIZING USE OF SPACE**

CuproBraze technology is ideal for situations where the efficient use of space is vital. CuproBraze radiators yield more cooling power in a smaller space. For example, charge air coolers do not need a precooler.

CuproBraze radiators make totally new solutions possible for design and space utilization. Vehicles can be smaller or more powerful. In addition, CuproBraze radiators are more durable than earlier radiators.

**EMISSION STANDARDS**

The new-generation, high-performance CuproBraze radiators, with their more environmentally friendly technology, will help you meet the Euro 4 and Tier 4 Final emission standards without compromising power or sacrificing limited space.

**THERMAL CONDUCTIVITY**

CuproBraze makes smaller product size and higher performance possible. This is due to copper’s thermal conductivity, which is 1.7 times higher than that of aluminium.
Profitable Investment

Each solution is engineered toward the customer’s productivity and reliability
When evaluating the profitability of investing in different radiator solutions, it is worth taking into consideration the expenses that rise throughout the product’s life cycle. In addition, the effects of different solutions on vehicle performance must also be evaluated.

**REPARABILITY**

A broken radiator may become extremely expensive for contractors if vehicle downtime is extended. Fixing a CuproBraze radiator is easy. The durable and flexible material is not as prone to dents as other materials, and maintenance and repairing measures can be performed on the spot.

Finnradiator offers radiators with superior durability. Less spare parts are needed, and there is less downtime than with other radiators. These are extremely significant factors when evaluating life cycle costs.

**MAINTAINABILITY**

The durable material of CuproBraze radiators makes them easier to clean. In dirty and muddy operating environments, it is not possible to keep radiators clean. This has a direct effect on radiator capacity which, in turn, affects the performance of the whole vehicle. CuproBraze radiators can be washed on the spot with pressurized air or water with no fear of bending the fins.

**INVESTMENT**

The profitability of CuproBraze radiators, compared with aluminium and soft soldered copper/brass radiators, springs from fewer expenses during their life cycle. Even the life cycle itself is longer, creating significant cost savings. Due to its advantages, CuproBraze is an excellent solution for heavy-duty applications such as agriculture, mining and construction, forestry, and military vehicles.
The right solution for you
Would you like to know what we have to offer?

Applications

Finnradiator is CuproBraze specialist in the radiator industry. CuproBraze radiators are made of copper and brass with the latest, state-of-the-art manufacturing methods and the best possible brazing alloys. CuproBraze takes the performance of heavy duty vehicles and machinery to a whole new level.

The quality of CuproBraze radiators can be measured very precisely already during manufacturing. This is why we can deliver products that are guaranteed to work, on time. Our production process is flexible to changes, and the amount of products in serial production can vary to a great extent, according to customer needs.

CUPROBRAZE

Aluminium radiators are optimal for light vehicles and less demanding conditions. Their advantages are their light weight and low acquisition price.
We manufacture water radiators according to customer's needs, either from copper and brass or aluminium. Radiator reservoirs can be either encased or deep drawn. Radiators can be finished with a variety of fan shroud solutions.

Charge air coolers are manufactured from copper/brass or aluminium. A pre-cooler is not needed in charge air coolers made with CuproBraze technology. A variety of different reservoirs, fasteners, and other parts are manufactured in our own foundry.

Oil coolers are carefully manufactured according to the customer’s measurements. Radiator cores can be manufactured either from aluminium or finned tubes.

We manufacture individualized combi-coolers by combining different cores in the same assembly. Combicoolers are manufactured from a combination of aluminium and copper/brass or aluminium alone.

We manufacture different radiator systems according to customers’ needs. The production of radiator systems includes the planning and manufacturing of a complete module as well as assembling the finished system.

We also plan and manufacture a variety of heater cores and fan shrouds according to customers’ needs.

Our operations are based on the ISO 9001: 2000 and ISO 14001: 2004 standards. Our quality policy is based on product characteristics and first-class delivery reliability.
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