OMEGA-plate specifications

OMEGA-plate can be manufactured from most stainless steel materials, such as 304, 316, 3116Ti, 321, SAF2205, LDX-2101, Hastelloy and Titanium. Other materials can be laser welded upon request.

The choice of surface finish is up to the customer. Our OMEGA-plates can be supplied in various finishes, such as cold rolled 2B, 2E, 2BB or 2R.

The machines are flexible in handling various dimensions, up to a maximum width of 2 meters, and a maximum length of 14 meters.

Material thickness

Single embossed OMEGA-plate
2,0 + 0,6/0,8 mm
2,5 + 0,8/1,0 mm
3,0 + 0,6/0,8,1,0/1,25 mm
4,0 + 0,6/0,8/1,0/1,25/1,5 mm
> 4,0 + 0,6/0,8/1,0/1,25/1,5/… mm

Double embossed OMEGA-plate
0,8+0,8 mm
1,0+1,0 mm
1,25+1,25 mm
1,5+1,5 mm
> 2,0+ > 2,0 mm

Pressures and temperatures:

OMEGA-plates can handle pressures up to > 100 bar depending on the required design temperature. Our experts will advise you regarding choice of materials and the best combination of material thicknesses.

Omega Thermo products B.V. qualifications

ASME U-stamp, PED, TÜV, AD Merkblätter.

Omega Thermo products B.V. services

Our specialists are more then happy to advise and assist you with;

1. Calculating the required heat exchanger surface for your application.
2. Engineering the welding pattern for shell and bottom design.
3. Choice of materials and material thickness for the jacket.
4. Design of the plates for final assembly.
5. Engineering and manufacturing of complete assemblies.

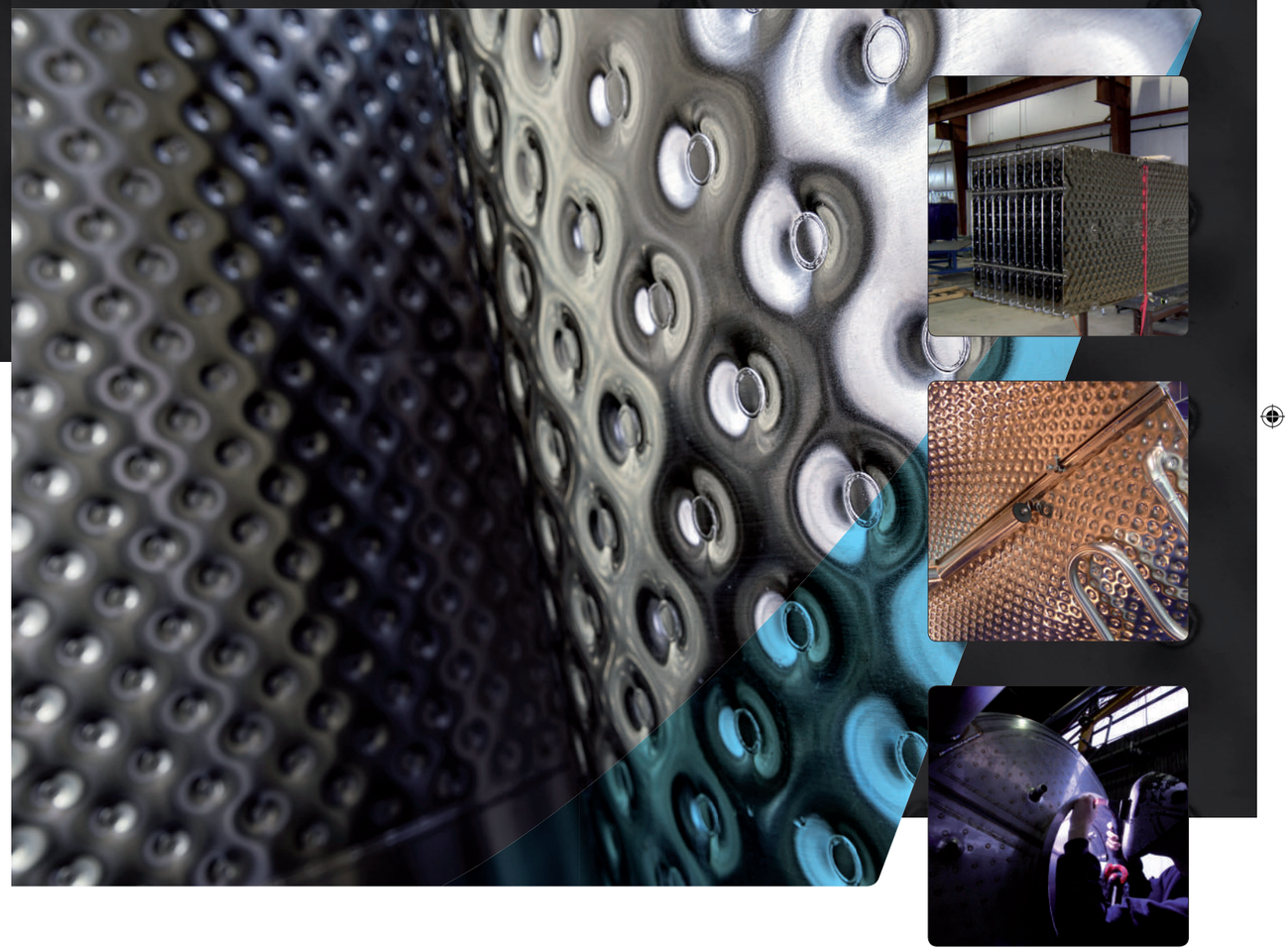
Please find below our contact details for further information or inquiries.

Omega Thermo Products B.V.
P.O. box 10013, 7504 PA Enschede, The Netherlands

Phone: +31-(0)53-8518800 Fax: +31-(0)53-8518869 E-mail: info@omega-group.nl
www.omegathermoproducts.nl

Omega Thermo Products

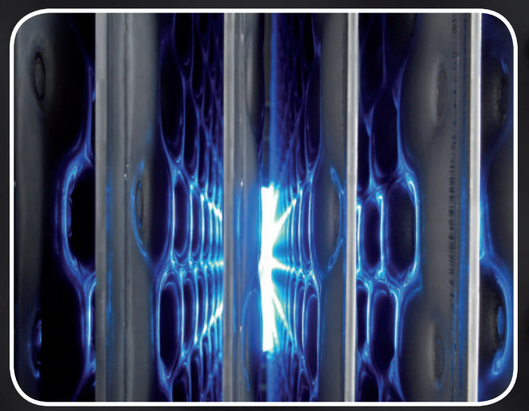
OMEGA-plate

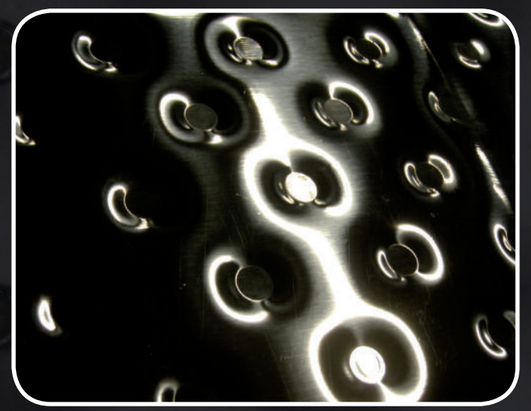


Tailormade solutions in Heat Transfer Technology

www.omegathermoproducts.nl

OMEGA-plates





- Superior heat transfer characteristics and cost savings through custom-made designs! Over 25 years experience in heat transfer technology Several designs possible, such as single- and double embossed OMEGA-plates

- Superior heat transfer.
- High turbulence with low velocities due to OMEGA-plate design.
- Even distribution of cooling and/or heating media.
- Lower operating costs.
- Reduced fabrication cost.
- Improved control characteristics due to low volume.
- Design suitable for complex geometries.

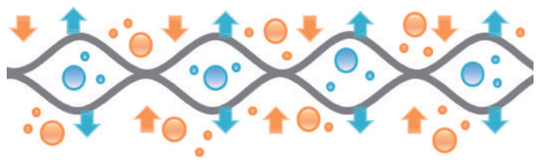
OMEGA-plate single embossed

OMEGA-plate single embossed is mostly used for applications where one side of the plate needs to be flat and smooth. For example, tank walls or heat exchanging surfaces for the food and pharmaceutical industry. One significant advantage of this application is that due to the controlled heat input and weld depth from laser welding, no heat tint will appear on the product contact side of the vessel wall. In fact, the protective foil is left in place and remains intact after welding.

Single Embossed OMEGA-plate (SE OMEGA-plate)

OMEGA-plate double embossed

OMEGA-plate double embossed is generally used when a smooth, flat surface is not required. Examples for this application are heat transfer surfaces in complete assemblies, such as plate banks for cooling or heating, falling film water chillers, ice machines, heat recovery banks, etc.



Double Embossed OMEGA-plate (DE OMEGA-plate)

Production of OMEGA-plate

Step 1 – Laser welding

The steel sheets are welded together by means of laser-welding. The laser welding machines that are utilized for this application are developed and manufactured by our own engineering department. The two sheets are welded together by circular laser welds, and a linear laser weld will be utilized around the circumference of the plate. Depending on the application requirements, additional baffle lines can be welded to route the cooling or heating medium and optimize thermal performance of the Omega-plate.

Step 2 – Forming

At this stage, the plates are flat and not formed so that they can be easily processed. The laser welded panels can be processed in our workshop, or shipped to the customer for forming into shells, dished heads or conical shaped ends.

Step 3 – Nozzle installation and inflation

Once the plates are formed into the required shape, such as a tank wall, the third stage will be the welding of the connections to the jacket and the “inflation” of the OMEGA-plate. Before laser welding, Omega can pre-cut the required hole size in the top sheet for easy installation of the connections. Once the laser welded sheets have been formed into their final shape, the pre-cut hole will be swaged open and lifted by using the “OMEGA opener”. This tool can be provided by Omega or you can use as alternative a chisel. After swaging and lifting the top sheet, the connections will be inserted and welded in place. Omega Thermo Products B.V. can supply connections upon request. The connections are attached by TIG welding the legs of the connection to the lower sheet and by welding the upper sheet to the circumference of the connection. After the connections are TIG welded, additional fittings or flanges can be attached to the connections.Once the connections are placed, the OMEGA-plates can be “inflated”. Depending on the required pressures for inflation, this can be done with pressurised nitrogen or water. Inflation procedures suitable for your products and plates are available upon request.