

## Topic 10 ROOFING

### Part 2: Roofing types

**Sandwich panel.** Sandwich panels are composite materials for facades and roofs. They are two layers of galvanized sheets or aluminium sheets, with polyurethane applied between them (they can be of different thicknesses and different densities). Used for surface coating, they have an aesthetic appearance as well. They are divided into roof, facade and cold room panels. Sandwich panels are a high-quality alternative to roofs and are easy to install. They provide a very high level of thermal, water and sound insulation. They do not need plastering or varnishing.

Galvanized sheets are treated to withstand corrosion. With the use of different thicknesses and types of filling, it is possible to use different layers, adapted to the respective circumstances. The main insulation materials in sandwich panels are polyurethane, stone wool and EPS. Polyester paint is usually used to paint the metal parts in sandwich panels. Sandwich panels are easy to install and have a high load-bearing capacity despite their low weight.

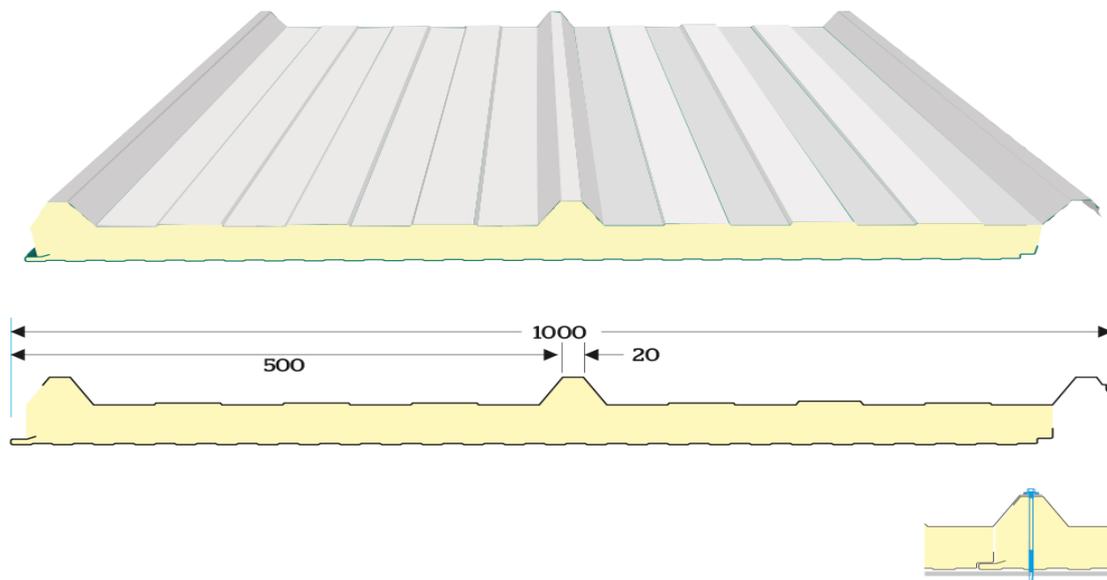


Figure 1. Sandwich panel

**Coating with metal plates.** This is one of the most commonly used roof systems because it is an affordable, easy to install lightweight material. However, this coating has a thermal insulation problem.

**Ceramic tiles.** They are widespread, but have a large own weight. In addition, they are easily breakable and are installed more slowly than other types of roofing. Advantages: affordable price, wide range of colours and shapes, good waterproofing and lack of maintenance during application.

**PVC coating.** One of the most affordable and frequently used coatings in terms of price. An advantage is their low weight. Disadvantages: fragility and aging.

**Acrylic coating tiles.** This is a stylish and modern roof covering which combines minimal water absorption and aesthetic appearance. The tiles are manufactured in different colours; the gluing

solution is also made in different colours to correspond to the colour of the tiles. With this technique the right colour combination for aesthetic compatibility between the facade and the roof is achieved. The colour is preserved over time. The colour can be changed to renew the roof.

**Bitumen-based coating.** This is a very suitable solution for a flat roof. When covering sloping roofs, bituminous tiles are used as a final coating. They are sprinkled with sand, which protects the bitumen from melting, and come in different colours and layouts. The main components in their production are bituminous granules, fiberglass and small additives. This type of technique is preferred because it does not load the structure much. The bitumen-based coating is resistant to harsh weather conditions, it is easy to apply to surfaces with intricate design and it requires no maintenance.

**Titanium-zinc-based coating.** This is a long-lasting and recyclable construction material. It is produced in the form of rolls of an average weight of about 150 kg. Due to the surface of the material, scratches close automatically. No maintenance is required; it is a durable and natural material. Titanium zinc is manufactured in desired lengths according to the application area. It is attached with metal clamps. Titanium zinc is waterproof, resistant to mechanical impacts, harmless to the environment product.