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TECHNICAL SHEET

ICE COVERTAN systems® - Ice Surface Covering

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1. Introduction

ICE COVERTAN systems® - Ice Surface Covering has been developed as a floor covering material for winter stadiums to cover the entire ice area, however, for its ruggedness and easiness of assembly/disassembly, it can be used for any surface (parquet flooring, pavements, concrete, earth, etc.) particularly inside the sporting, cultural and social rooms. It is possible to utilize these surfaces for multifunction purposes by using the covering plates, e.g. utilize the winter sports facility for other sport activities, for cultural events (concerts), or as an occasional swap meet market.

2. Basic Specifications

Thanks to its shape, dimensions and chosen materials, the ICE COVERTAN systems® can be easily assembled/disassembled, it has low weight and low fire load, increased thermal-insulation capability, increased chemical resistance, increased load capacity, and good recyclability. Low weight of covering plates further decreases the time demand for assembly/disassembly and lowers a number of employees needed.

Ice Surface Covering consists of two layers made of thermoplastic materials, which are jointly connected (by screws) and detachable. The upper plate is a covering one with the high mechanical and chemical resistance, and it has an anti-slippery design. The lower plate consists of three identical component parts, it has a thermal-insulating design, and it is equipped with dovetailed locks around its entire circumference.

For an improvement of esthetic image and for an improvement of insulation capabilities of covering plates after the assembly, the upper plates are embedded alongside the dovetailed locks of the two neighboring surfaces into the hollowing of the lower plates, and they are prominently offset above these cavities on the opposite neighboring surfaces.

For a higher cost, the colored design of the upper plates is practicable, however, based on the previous experience, the black color is the best (particularly for concert events).

3. Technical Parameters

3.1. Upper Plate

Material: TPU/ABS (polyurethane elastomer/acrylnitrile-butadiene-styrene-copolymer)

Color: black

Volumetric weight according to ISO 1183: 1,090 - 1,120 kg/m³

Weight: 6.7 kg

FTCH (Fire-Technical Characteristics):

Softening point according to ISO 306: >85 °C

Decomposition temperature: >260 °C

Foreign ignition temperature: >210 °C

Combustion heat value according to DIN 51900: 25 - 38 MJ/kg

Coefficient of equivalent wood amount K: 2.3

3.2. Lower Plate

Material: PP-E (expanded polypropylene)

Color: dark grey to black

Volumetric weight: 70 - 80 kg/m³

Weight: 5.7 kg

FTCH according to ČSN 64 0149 (ISO 871):

Firing temperature: 335 °C

Firing delay: 672 s

Ignition temperature: 400 °C

Ignition delay: 562 s

FTCH according to ČSN ISO 1928:

Heat of combustion: 46.09 MJ/kg

Calorific power: 43.22 MJ/kg

Coefficient of equivalent wood amount K: 2.6

3.3. Connective Material

Material (screws, washers): PA (polyamide)

Color: black

Volumetric weight: 1,140 kg/m³

Weight: 0.1 kg

FTCH according to ČSN 64 0149 (ISO 871):

Firing temperature: 430 °C

Firing delay: 321 s

Ignition temperature: 490 °C

Ignition delay: 186 s

FTCH according to ČSN ISO 1928:

Heat of combustion: 30,66 MJ/kg

Calorific power: 28,90 MJ/kg

Coefficient of equivalent wood amount K: 1.7

3.4. Complete Plate

Dimensions (for repeated applications): 1,744 x 1,159.5 x 38 mm

Dimensions (maximum, for storage): 1,796 x 1,211.5 x 38 mm

Area: 2.0222 m²

Weight: 12.5 kg

Number of plates on area of 1,800 m²: ca. 900 pcs.

Weight of plates on area of 1,800 m²: ca. 11,250 kg

Load capacity: 0.25 MPa (example: load capacity of a pedestal leg of 105 mm in diameter is 220 kg, load capacity of a pedestal leg of 200 x 200 mm in dimensions is 1,019 kg)

Heat conductivity coefficient: 0.044 W/mK

Heat transmission resistance: 0.916 m²K/W

Classification according to reaction to fire pursuant to article 11.3 of the ČSN EN 13501-1 2002 standard: E_{fl}

Incidental fire load p_n: 15 kg/m²

Adequate extinguishing materials: we recommend medium or heavy foam, shattered water stream, or water fog. Small fires can be extinguished by a water, foam, or powder extinguisher.

4. Assembly and Disassembly

If it is necessary to modify the shape and dimensions of edge plates according to a specific stadium area (e.g. by reciprocating and circular saw) and to add the connecting elements, the first laying of ICE COVERTAN systems® covering plates will be made by a supplier. Dimensions and radiuses of stadium corners are never identical even if they are being specified for example as 60 x 30 m, R8.

Repeated assembly/disassembly is very easy and the stadium crew or employees of other stadium areas can easily cope with it.

With respect to overlapping of the upper layer in relation to the lower layer, the assembly must be started in the predetermined surface corner and it must continue in the direction of the opposite corner. Nonetheless, a replacement of any covering plate for another one is possible. During assembly, the tothing is being embedded vertically into the dovetailed lock groove. This way the tearing out of the covering plates is eliminated, for example during the cultural and sporting events.

Disassembly is a reversed procedure of assembly.

In the case of wear and tear or damage of the upper or lower layer only, the plates can be easily separated, and the damaged plate can be replaced for a new one. The damaged or worn out plates or connective materials are recyclable.

5. Maintenance

The common cleaning and washing machines for industrial floors can be used for cleaning while using regular cleaning agents (detergents). It is recommended to protect the surface with a foil or geotextile when using any powdered materials above the covering plates (e.g. red clay, earth, etc.).

6. Transportation and Storage

Only a one-sided wooden pallet of the dimension of 1,850 x 1,280 x 1,720 (height 40 pcs. including the pallet) supplied by a supplier can be used for transportation and storage of covering plates. The pallets of different dimensions can cause damage, and in that case, the supplier shall not be liable for any of these damages.

The storing temperature is -20 to +50 °C, the plates must be protected from atmospheric exposure, particularly from the direct sunlight.

7. Ecology

All components of the ICE COVERTAN systems® covering plates are 100% recyclable.

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