DAVIS trackhire

ALUMINIUM DTH PANELS

OVERVIEW

The **DTH Panel** system is primarily designed to provide a 3.0 metre wide load-bearing temporary access road to allow up to the heaviest road-going vehicles to safely travel over the harshest of terrain.

Dependent upon site conditions, these aluminium panels can be laid in almost any configuration from a single or double width roadway with turning circles and passing bays, to a large site compound or temporary car park to create a safe and efficient passage for both site traffic and pedestrians and avoid costly remediation works.

Each panel is made up of structurally designed box sections which slide together to form an articulated joint which allows the panel to follow the contours of the undulating surface.

The dual-purpose panel has two sides - a low-profile, pedestrian-friendly side and a high-profile, high traction side that provides high mechanical grip and all-round traction. DTH Panels also have hidden bolts and cross-plates which are encased within the panel, as well as flush overlapping edges.

SUITABILITY


Temporary Roadway

Crane Pad


Site Compound


Temporary Car Park

INSTALLATION

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Scotland Depot: 103A Main Street, Newmains, Wishaw, ML2 9BG
England Depot: Gresley Road (Off Stirling Road), West Carr Industrial Estate, Retford, DN22 7SN
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DIMENSIONS AND PROPERTIES

Dimensions
Product Dimensions (Width x Length):
3000mm x 2497mm
Usable area when joined (Width x Length):
3000 mm x 2401mm = 7.2sqm

Box Section Properties
Width of section = 253mm
Depth of section = 53mm

Weight
265kg per panel

Weight Loading
Up to 15 tonnes per axle dependent upon sub-surface and panel configuration. Please seek further advice from Davis Trackhire if weight exceeds 15tn/axle

Mechanical properties and strength calculations

- Alloy 6005A T6
- Yield strength of alloy 215N/mm2 minimum value
- Ultimate tensile strength 255N/mm2 minimum value
- Hardness of alloy 85 Brinell

MECHANICAL PROPERTIES & STRENGTH CALCULATIONS

Load calculation condition 1:
1 plank, 3000mm long, simply supported at the ends, point load of 900Kg at centre.

Deflection = WL3/48EI Where W = 900Kg x 9.81 / 1000 = 8.83KN
L = 300cm
E = 6900Kn/cm² (Modulus)
I = 91.29cm⁴ (Second moment of area)
Y = 2.94cm

Therefore: **Deflection** = 8.83 x 3003 / 48 x 6900 x 91.29 = 7.885cm = **78.9mm**

Bending moment = WL/4 = 8.83 x 300/4 = **662.25M**

Bending stress = MY/I = 662.25 x 2.94/91.29 = 21.33KN/cm² = **213.3N/mm²**

Load calculation condition 2:
1 plank, 3000mm long, simply supported at the ends, uniformly loaded along its length with an 1800Kg load

Where W = 1800Kg x 9.81 / 1000 = 17.66KN
Deflection = 5WL3 / 384EI

Therefore: **Deflection** = 5 x 17.66 x 3003 / 384 x 6900 x 91.29 = 9.86cm = **98.6mm**

Bending moment = WL/8 = **662.25M**

Bending stress = MY/I = 662.25 x 2.94/91.29 = 21.33KN/cm² = **213.3N/mm²**

These load conditions are extreme, in reality the plank will always be support by the ground condition somewhere along its length. Also, loads will be spread over adjoining planks within in the panel.

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