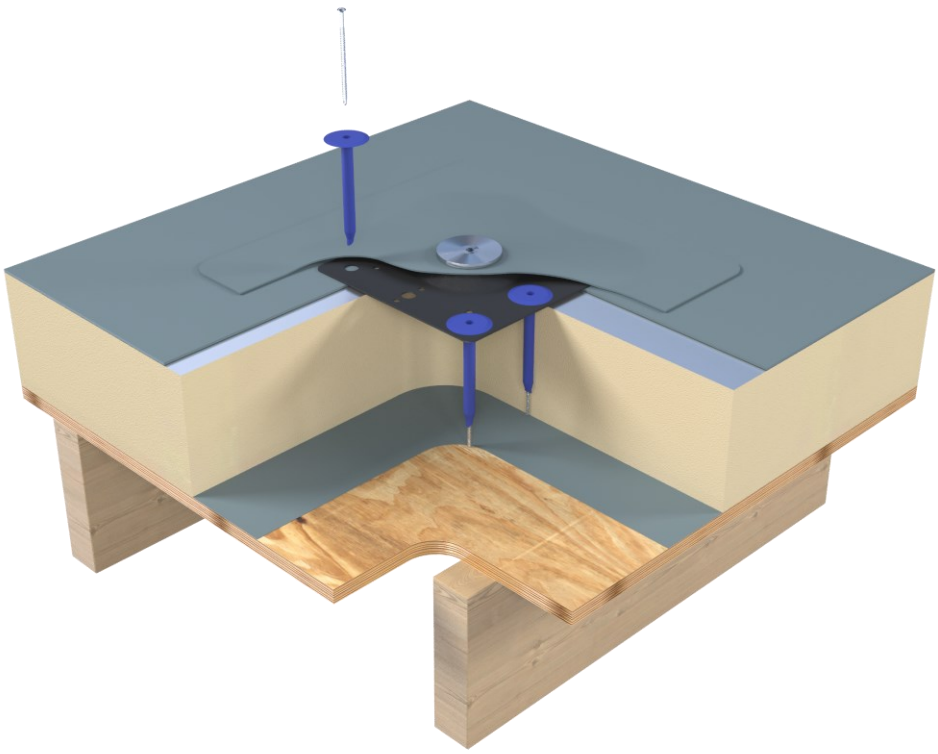
integrated fixing point
ROOFTRAK®



Test Report Summary - ROOFTRAK IFP250
December 2022

roof products
NICHOLSON®

integrated fixing point ROOFTRAK®

ROOFTRAK IFP250 test report document.

Overview

The ROOFTRAK IFP250 is an integrated fixing point designed to achieve a connection to the structure through the waterproofing layer whilst maintaining the integrity of the waterproofing membrane system.

This product is manufactured by NICHOLSON STS LTD and protected under European patent 2855794 and US patent 9637917.

The IFP250 has many different uses although the application is the same. Such uses will include the fixation of solar array frameworks, fixation of rainscreen cladding frameworks, fixation of signage and façade features and the support of rooftop plant and cable trays. The IFP250 is not for use where non-axial loads will be applied such as, but not limited to, handrail balustrade. Alternative ROOFTAK products are available for these applications. The product effectively helps to bridge the knowledge gap between trades enabling a excellent and long term detailing.

There is currently no UK/EU test or performance standard applicable to the IFP250 product, however the IFP250 has been independent tested against the performance claims set out in our product data sheets.

The following is a summary of the test criteria and test results taken from the BRE test report.

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ROOFTRAK IFP250 test report document.

The ROOFTRAK IFP has been tested against criteria as established by NICHOLSON and referred to in the product data sheets..

1. Axial Tensile Load test
    1. The ROOFTRAK IFP250 as an independent unit is able to withstand an axial tensile load of 5kN whilst remaining with the residual deflection limit (RDL) of 0.25mm at the centre dome. RDL reached at 8kN
    2. The ROOFTRAK IFP250 as an independent unit is able to withstand an axial tensile load of 5kN whilst remaining with the displacement limit of 5mm anywhere on the baseplate. Displacement limit not reached at 9kN

2. Axial Compressive Load test
    1. The ROOFTRAK IFP250 as an independent unit is able to withstand an axial compressive load of 5kN whilst remaining with the residual deflection limit (RDL) of 0.25mm at the centre dome. RDL not reached at maximum load test of 9kN
    2. The ROOFTRAK IFP250 as an independent unit is able to withstand an axial compressive load of 5kN whilst remaining with the displacement limit of 5mm anywhere on the baseplate. Displacement limit not reached at 9kN

3. Axial Lateral / Shear Load test – Cold roof
    1. The ROOFTRAK IFP250 as an independent unit is able to withstand axial shear loads of 2.5kN whilst remaining within the residual deflection limit (RDL) of 0.25mm at the centre dome. RDL reached at 6kN
    2. The relative movement of the baseplate under load (2.5kN) to stay within the maximum limit of 5mm. 5mm limit reached at 6kN

4. Axial Shear Load on Rigid - warm roof
    1. The ROOFTRAK IFP250 as fitted onto rigid PIR insulation is able to withstand axial shear loads of 2.5kN whilst remaining within the residual deflection limit (RDL) of 0.25mm at the centre bush. RDL reached at 4.5kN
    2. The ROOFTRAK IFP250 relative movement of the baseplate under load (2.5kN) to stay within the maximum limit of 5mm. 5mm limit reached at 4.8kN

5. Waterproofness

    The ROOFTRAK IFP250 will remain sealed underload load using both single ply and bituminous membranes. 1m head of water with 5kN tensile load applied for 48hrs.
    1. Single ply membrane – no water ingress
    2. Bituminous membrane – no water ingress

These results are verified in the BRE summary report on the following pages

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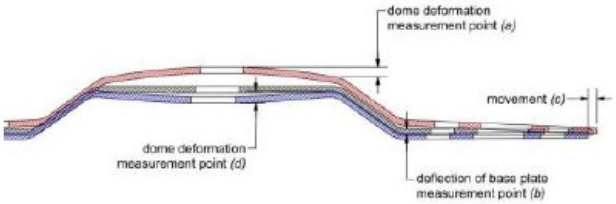
Test Summary Report

Customer: Nicholson Roof Products

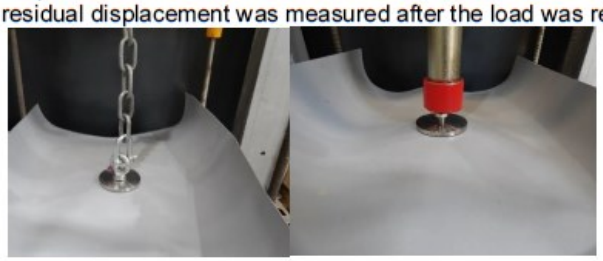
Product: Rooftrak IFP250

Method: Testing was undertaken to assess the performance of the Nicholson Roof Products Rooftrak IFP250 product. The test methods were based upon previous work completed in-house by Nicholson Roof Products, as detailed in their test Report NTR458726. Maximum deflection limits were provided by Nicholson Roof Products provided the following sketch to show where deflection measurements should be taken;



1. Baseplate Vertical Uplift Load and Compressive Load

The IFP250 and single ply membrane was attached to a plywood substrate as per the client's installation instructions. A central threaded bolt was attached to the IFP250 to allow the load to be applied vertically upwards or downwards in 50kg increments up to 900kg (8800N). Displacement measurements were made at each load increment during loading and the residual displacement was measured after the load was released.



2. Baseplate Lateral Load - Cold Roof and Warm Roof

The IFP250 and single ply membrane were attached vertically to a cold roof and warm roof substrate as per the client's installations instructions. The cold roof substrate was a 18mm plywood board whilst the warm roof substrate consisted of a 150mm PIR mounted on a 18mm OSB substrate. A beam was attached vertically to the IFP250 via a central bolt to allow a load to be applied via a hydraulic ram in 50kg increments up to 600kg (5900N). Displacement measurements were made at each load increment during loading and the residual displacement was measured after the load was released.

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3. Watertightness

The IFP250 product with a single ply membrane followed by a bituminous membrane was attached to a plywood substrate as per the client's installation instructions. A tube held 1000mm depth of water in place over the central fixing point. Simultaneously, a load of 510kg (500N) was applied and held for 48 hours.

Results:

Vertical uplift load:

- The residual deflection limit (0.25mm) of the centre bush dome, at position a, was exceeded at a load of 800kg (7848N).
- The displacement of the baseplate under load, position b, remained below the 5mm limit to the maximum applied load of 900kg (8829N).

Vertical compression:

- The residual deflection limit (0.25mm) on of the centre bush dome, position a, was not exceeded up the maximum load applied of 900kg (8829N).
- The displacement of the baseplate under load, position b, remained within the 5mm target up to the maximum applied load of 900kg, (8829N).

Lateral loading cold roof:

- The residual deflection of the centre bush dome, position a, remained less than the 0.25mm limit up to the maximum applied load of 600kg (5900N).
- The movement of the baseplate relative to its starting location on the substrate, position b, remained below the 5mm limit up to the maximum applied load of 600kg (5900N), as measured at both the top and bottom dome.

Lateral loading warm roof:

- The residual deflection of the centre bush dome, taken at position a, exceeded the 0.25mm limit at an applied load of 450kg (4400N) as measured at the top of the centre bush dome. The residual deflection of the centre bush dome at the bottom remained below the 0.25mm limit up to maximum applied load of 600kg (5900N).
- The movement of the baseplate relative to its starting location on the substrate exceeded the deflection limit of 5mm at an applied load of 481.8kg (4726.6N).

Watertightness:

- No evidence of water was seen having passed through the baseplate with the single ply membrane.
- No evidence of water was seen having passed through the baseplate with the bituminous membrane.

Testing Conducted:	August 2022
Report No:	P123227-1001 Issue 2
Signed:	S.J.Croucher
Prepared by:	Mr Simon Croucher, Wind Engineering Technician, Assurance Division, BRE
Date:	25th November 2022

This document summarises the testing and associated outcomes presented in full within BRE Test Report No. P123227-1000 dated 17th November 2022. This summary should be read in conjunction with the test report which contains additional details relating to test sample, experimental set-up and product mounting. BRE does not endorse this product nor warrant its performance in use and accepts no liability for any loss or damage arising from its use.

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Questions relating to this report should be directed to technical@nicholsonsts.com.