

Tarkett AB
Joacim Karlsson
Ronnebyhamn
372 81 Ronneby
Sweden

The floor covering iQ One

This report is a revision of the report with the number 5F017031 written on 26th of October 2015. The performance and result for EN 425 have been added and the name IQ One has been corrected to iQ One.

Test Object

A homogeneous floor covering composed of thermoplastic polymers (Non PVC) arrived to SP Technical Research Institute of Sweden in September the 4th. The test sample was sent by the commissioner and was designated **iQ One**, with the thickness: **2,00 mm**, and the weight **2800 gr/m²**.

Commission

The floor covering was tested according to **EN 14565 Resilient floor coverings - Floor coverings based upon synthetic thermoplastic polymers – Specification**

- ISO 23997 *Determination of mass per unit area*
- EN 14565 Annex C *Method of test for dimensional stability*
- ISO 23999 *Determination of dimensional stability and curling after exposure to heat, only curling.*
- ISO 24343-1 *Determination of indentation and residual indentation - Part 1: Residual indentation*
- ISO 24344 *Determination of flexibility and deflection*
- ISO 24346 *Determination of overall thickness*
- EN 425 *Resilient and laminate floor coverings - Castor chair test*
- SS-EN 684 *Determination of seam strength*
- SS-EN 13553 Annex A *Determination of water tightness*

Summary

The floor covering iQ One passed all the tests.

SP Technical Research Institute of Sweden

Postal address
SP
Box 857
SE-501 15 BORÅS
Sweden

Office location
Västeråsen
Brinellgatan 4
SE-504 62 BORÅS

Phone / Fax / E-mail
+46 10 516 50 00
+46 33 13 55 02
info@sp.se

Laboratories are accredited by the Swedish Board for Accreditation and Conformity Assessment (SWEDAC) under the terms of Swedish legislation. This report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Performance and results of the tests

The floor covering was prepared and tested according to the methods above. The tests were performed during September and October . The test object was conditioned before testing in a room with the climate 23 ± 2 °C and 50 ± 5 % RH where it also was tested.

ISO 23997 Determination of mass per unit area.

[g/m ²]		Requirements
Value according to manufacturer	2800	-
Average value of five samples	2713	2520- 3164
Standard deviation	0,014	-
Difference	-3,1%	-10 - + 13%

EN 14565 Annex C Determination of dimensional stability

Three test specimens were conditioned and measured in machine direction and transverse machine direction. The test pieces were bonded to mineral fibre board pieces with Casco Proff 3448, 0,25 l/m². The test pieces were measured 24 hours after the adhesion and after conditioning and drying of the adhesive for 7 days. Each the test piece was measured again and the surface temperature was raised to 50 °C within one hour. This temperature was maintained during three hours and another measurement was done at half the time. The test piece was removed from the heat and conditioned for another 24 hours when the final measurement was done.

	After bonding ²	During exposure to heat ²	After exposure to heat ²
MD¹	0,108%	0,023%	-0,138%
TD¹	0,262%	0,169%	0,096%
Requirement	-	-	≤ 0,20 %

¹ MD = Machine direction; TD = Transverse machine direction.

² The results are mean values from six measurements

ISO 23999 Determination curling after exposure to heat

Three samples were heated to 80°C for 6 hours. There was no curling in iQ One.

ISO 24343-1 *Determination of residual indentation*

Values [mm]		Requirements
Average of three samples	0,019	$\leq 0,1$
Standard deviation	0,002	-

ISO 24344 *Determination of flexibility and deflection*

No cracking or any other deterioration could be observed in this test. iQ One passed this test using a 10 mm mandrel.

Requirements in EN 14565 say “Test using a 20 mm mandrel. For products which show signs of cracking, perform a further test using a 40 mm mandrel. If results show no further cracking, record the use of a 40 mm diameter mandrel. Cracking when using a 40 mm mandrel is to be recorded. The test shall be repeated with method B. If no cracking occurs the material is semi flexible.”

ISO 24346 *Determination of overall thickness*

Thickness [mm]		Requirements
According to manufacturer	2,00	-
Average value of 10 samples	1,96	1,9 – 2,13
Highest value obtained	2,05	$\leq 2,11$
Lowest value obtained	1,91	$\geq 1,81$
Standard deviation	0,046	-

EN 425 *Resilient and laminate floor coverings - Castor chair test*

According to EN 12529, castors type W was used. No delamination or disturbance could be observed after the test.

iQ One passed EN 425 with a smooth and undamaged surface.

Requirements: After 25 000 cycles, no delamination shall occur. No disturbance to the surface other than slight change in appearance.

SS-EN 684, Determination of seam strength

Force [N/50 mm]		Requirements
Average from 6 measurements	478	≥ 240
Minimum value obtained	455	≥ 180
Standard deviation	15,2	–

iQ One was welded before testing the seam strength.

Requirements in EN 14565 say: “ For classes 31 and higher, if welding is required” and the values in the table.

EN 13553, Annex A, Testing of water tightness

A sample of iQ One was tested according to this method were the material is welded by the commissioner and put under a pressure of 200 mm water for 24 hours in the test laboratory.

The sample passed the test, no leakage could be observed.

Requirements according to EN 13553: “The welded product shall be classified watertight”.

Uncertainty of measurement

ISO 23997: Mass per unit area	± 0,02 % ¹⁾
ISO 23999: Curling	± 0,7 mm ¹⁾
ISO 24343-1: Indentation	± 0,9 % ¹⁾
ISO 24346: Overall thickness	± 0,01 mm ¹⁾
EN 684: Seam strength	± 2,1 % ¹⁾

The reported uncertainty is an expanded uncertainty (U), based on a standard uncertainty multiplied by a coverage factor, k=2, which provides a level of confidence of approximately 95 %.

¹⁾ *The uncertainty of measurement applies for a single measurement value. The spread in results due to variations in sample characteristics is not accounted for in the given uncertainty of measurement.*



SP Technical Research Institute of Sweden
SP Chemistry, Materials and Surfaces - Polymer and Fiber (KMp)

Performed by

Examined by

Elva Gunnarsdottir (fd Peterson)

Marcus Granlund