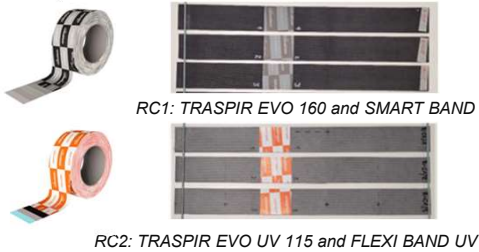


Rothoblaas

Product: Membranes and tapes connections

Rothoblaas is an Italian multinational company from the Alpine region, leader in the development and supply of high-tech solutions for the areas of beam and post and Mass Timber construction systems, energy efficiency, zero emissions and other building best practices.



Pilot Measurement & Verification Line 7

Managed by: CUT



PM&V L7

Mechanical, durability, vibroacoustic, thermal, and microclimate comfort tests of envelope products and their connectors. Mechanical, vibroacoustic, thermal, and structural (scanning and optical microscope, spectrofotometr) tests are used for ageing diagnosis.



SAFETY



EFFICIENCY

Which is the need covered by this service?

The implemented durability program was based on certification requirements for membranes with appropriate modifications taking into account more intense UV exposure than provided for in the standard and their connections with tapes. The obtained results set the path for further research and product development as well as making the construction products comparable.

Design of Experiments



STAGE 1
Shear resistance of joints end lap jointing test before ageing according to EN 12317-2



STAGE 2
UV ageing according to Annex C EN 13859-1 with modification to 5000 h

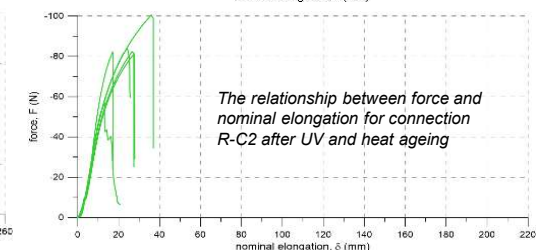
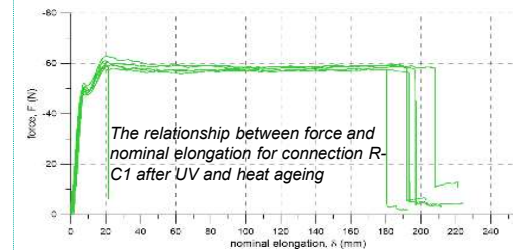
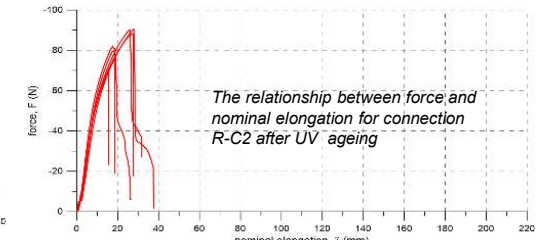
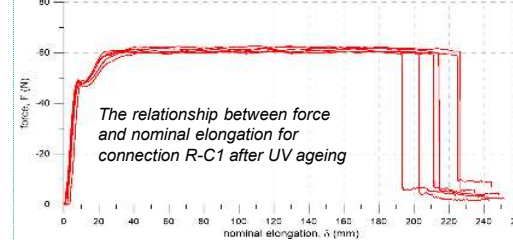
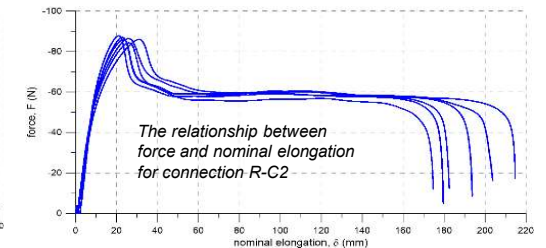
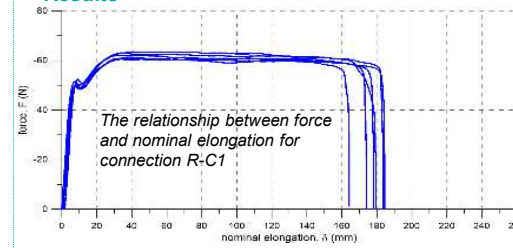


STAGE 3
Heat ageing according to Annex C EN 13859-1



STAGE 4
Shear resistance of joints end lap jointing test after ageing according to EN 12317-2

Results



Open Innovation outcomes

In order to determine the durability of the connections between membrane and tapes and enhance the credibility of product performance information, a non-standard test was carried out involving the ageing of the connected materials. Moreover, a significantly modified UV ageing time was used from 336 to 5000 hours.



Conclusions

The UV ageing did not influence shear resistance of the joint for the connection RC-1, whereas it caused a slight reduction in shear resistance for the connection RC-2.

The UV and heat ageing reduced slightly shear resistance of the joint for both the tested connections.

The both used ageing procedures caused the change in the observed failure mode. All the reference specimens failed due to membrane-tape separation. The aged connections RC-1 failed due to membrane peeling. The aged connections RC-2 failed due to breaking of the tape.



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