



Testing and evaluation of PVC-bonding with STP/MS adhesives of the product series COSMO® HD Page 1/2

Generally

From our own experience, PVC-hard materials from different manufacturers and production processes cannot be bonded age-resistently without the appropriate preparation or after only simple cleaning.

Possibly, at first, some adhesives on the market seem to be sufficiently adhesive if initially tested in an ordinary test which results in a respective evaluation, also without an appropriate preparation of the PVC surface. However, if these are subject to a respective ageing test, they usually will always fail.

It can also happen that, depending on the manufacturer and the preparation of the PVC by the manufacturer (Corona or plasma preparation), it might be that bonding with exactly this quality is possible. Nevertheless, if only one parameter changes, or there are batch-specific differences of the PVC, extreme variations in the bonding results or quality of the bonded joints can occur.

For this reason, we recommend always using our activator COSMO® CL-310.110, without exception, for bonding of PVC-hard with the adhesives listed below.

Here, we tested the durability of the resulting bonded joint for many times in multiple tests and ageing scenarios and verified the reproducibility of the bonding quality.

Based on the recognised bead peel test as per DVS 1618 or the ageing test „Cataplasma“ favoured by the German Adhesives Association with various degrees of influences as well as the respective tests of tensile lap-shear strength on the basis of DIN EN 1465, the bonded joints made by the combinations turned out to achieve durable and safe connections to surfaces of the substrate PVC-hard.

Only use the activator in connection with the following adhesives:

COSMO® HD-100.220

(must be tested for suitability.)

COSMO® HD-100.400*

COSMO® HD-100.450

COSMO® HD-100.470*

COSMO® HD-100.480*

COSMO® HD-100.540*

COSMO® HD-100.600*

COSMO® HD-100.800*

COSMO® HD-200.100*

COSMO® HD-200.121*

COSMO® HD-200.131*

COSMO® HD-200.201*

COSMO® HD-200.301*

*and colour variants

Overview on test scenarios and tests

Test equipment:

- Binder drying chamber
- Vötsch VT 4011 temperature test chamber
- Siemens deep freezer
- Conditioning room (at +20 °C, 50 % relative air humidity)

Cleaner/activator-preparation:

- COSMO® CL-300.150, special cleaner
- COSMO® CL-310.110, activator

Tested PVC manufacturers (excerpt):

- Röchling
- Simona
- Ongropack
- Profine

Tests:

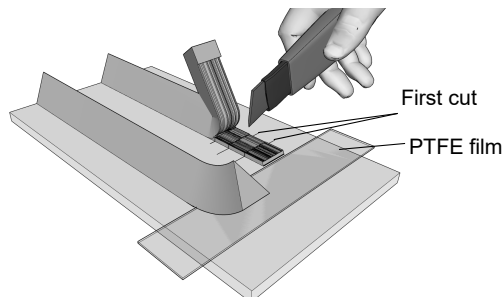
Bead peel test, based on DVS 1618





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Each sample is subject to the following treatments one after another. After each treatment, another bead of test-length is peeled off and the break image is visually assessed. After that, the specimen is put to the next treatment. In test 5, the specimen has then passed all treatments.



Tests after	treatment
1	7 days at +23/50-2 (as per DIN 50014)
2	7 days H ₂ O, dist. at +20 °C plus 2 days at +23/50-2 (as per DIN 50014)
3	1 day at +80 °C (test immediately)
4	2 hours at 23/50-2 (as per DIN 50014)
5	7 day at +70 °C in saturated humidity (Cataplasma) plus 2 hours at +23/50-2 (as per DIN 50014 – procedure E2) (if necessary, following shock cooling to -30 °C)

Note:

Preferably, the 5th treatment (Cataplasma storage) is carried out as follows: Wrap the specimens in damp cloths, then weld into PE film and store at +70 °C. If necessary, the 5th treatment can be complemented by a cold storage time of one day at -30 °C.

Important instructions

Our user instructions, processing guidelines, product- and performance data, and other technical statements are only general directives; they describe only the condition of our products (values, determination of values on the date of completion) and the performances do not represent a warranty in the sense of § 443 BGB. **Because of the wide variety of applications of the individual product and the relevant special conditions (e. g. processing parameters, material characteristics, etc.), it is up to the user to test it itself;** our free expert advice for application provided in speech, writing, and as test is nonbinding.

