

The Formwork Experts.

Water stop connector 15.0 and Water stop connector 20.0

Art. n° 581467000

Art. n° 581914000

Test Report

water impermeability

AB 1391-3_en



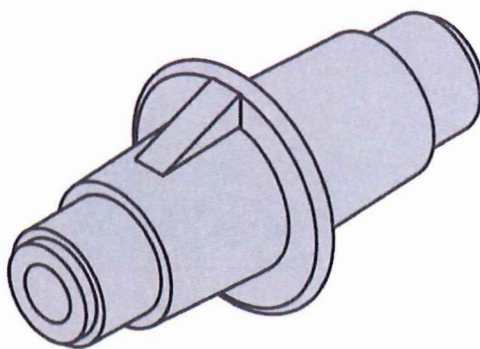
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DOKA INDUSTRIE GMBH
JOSEF UMDASCH PLATZ 1
3300 AMSTETTEN

WATERTIGHT FORM-TIES
WATERSTOP 15.0 / 20.0



LABORATORY TEST REPORT – WATER TIGHTNESS
(CASTING AND TEST DATE: OCTOBER TO DECEMBER 2013)

THIS REPORT MAY ONLY BE PUBLISHED IN FULL LENGTH (11 PAGES INCLUDING FRONT PAGE).
TEST RESULTS ONLY SHOW THE PROPERTIES OF THOSE TESTED SPECIMEN DESCRIBED WITHIN THIS REPORT.

1 GENERAL

The laboratory „Materialversuchsanstalt (MVA) Strass“ of Pöyry Infra GmbH Austria was assigned on 17th September 2013 by the client „Doka Industrie GmbH“, to perform tests regarding the water tightness of form-ties.

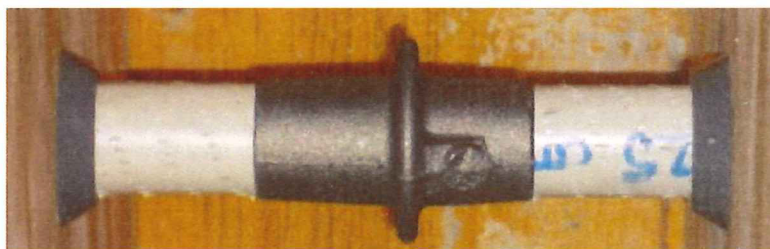
2 PROCEDURE

- Casting of the test walls and assembly of the tested form-ties took was performed by the client (see photo documentation in attachment 1). After hardening of the concrete the samples including the form-ties have been extracted by means of core drilling with a diameter of Ø 160 mm (see photo documentation in attachment 1).
- Determination of the water penetration depth on three samples for each type of form-tie as well as on three additional samples without form-ties was performed by Pöyry Infra GmbH.
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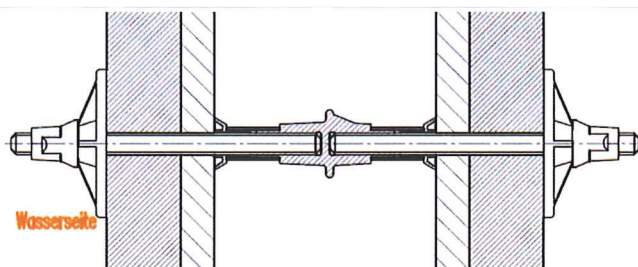
2.1 Tested Form-ties

DOKA Waterstop 15,0 – 58 1914 000

Form-tie

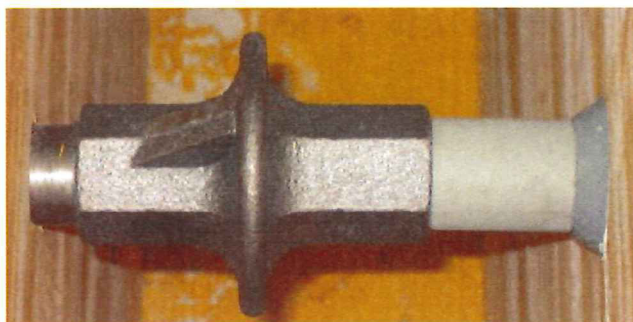


Scheme of the construction set-up

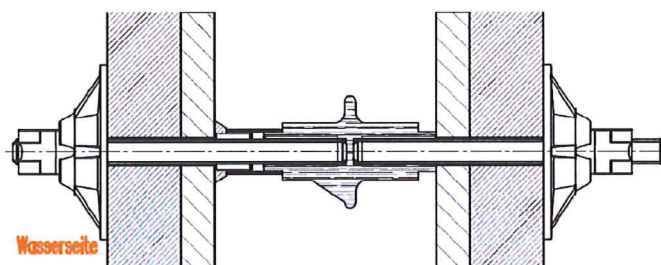


DOKA Waterstop 20.0 – 58 1467 000

Einbauteil



Systemskizze Bauteil



Installation and use: see Doka User Information

2.2 Concrete

The concrete mix design corresponds to a concrete class C25/30/XC4/XF3/GK22/F45 according to EN 206.

All mix design components (raw materials) are CE certified.

3 TEST RESULTS

3.1 Sampling

After drilling of the samples (age of concrete was 3 days) the specimen have been stored under water ($20 \pm 5^\circ\text{C}$) in accordance with EN 12390-2. Specimen preparation and testing have been performed based on EN 12390-8. A water pressure of 500 ± 50 kPa (5.0 ± 0.5 bar) has been applied to the samples (minimum 28 days old) for 72 ± 2 hours. Samples have then been split rectangular to the area where the water pressure has been applied (deviating from the regulations of EN 12390-8 this area did not face downwards due to the embedded form-ties). The water penetration was then marked at the samples testing area and the maximum penetration depth was evaluated and noted.

3.2 Water penetration of comparator samples without form-ties

Maximum water penetration depth, age of 28 days, based on EN 12390-8

Average of three samples **20 mm**

Sample 0-1



Sample 0-2



Sample 0-3



3.3 Water penetration of test samples - form-tie „Doka Waterstop 15.0“

Maximum water penetration depth, age of 28 days, based on EN 12390-8

Average of three samples **13 mm**

Sample 15-1



Sample 15-2



Sample 15-3



3.4 Water penetration of test samples - form-tie „Doka Waterstop 20.0“

Maximum water penetration depth, age of 28 days, based on EN 12390-8

Average of three samples **20 mm**

Sample 20-1



Sample 20-2



Sample 20-3



CONCLUSION

The samples with embedded form-ties “Doka Waterstop 15.0” and “Doka Waterstop 20.0” showed a water penetration of 13 and 20 mm respectively which is less or equal compared to reference samples without form-ties.

No passing of water could be observed at the opposite side of the test area.

Materialversuchsanstalt Strass

Pöyry Infra GmbH



i.A. Ing. Rainer Draxl

Head of Laboratory

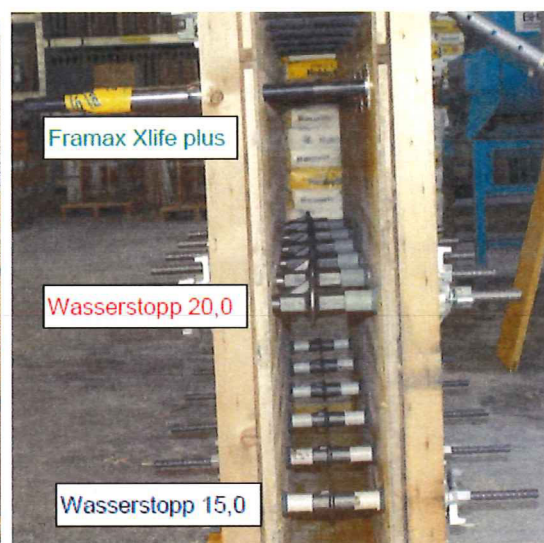
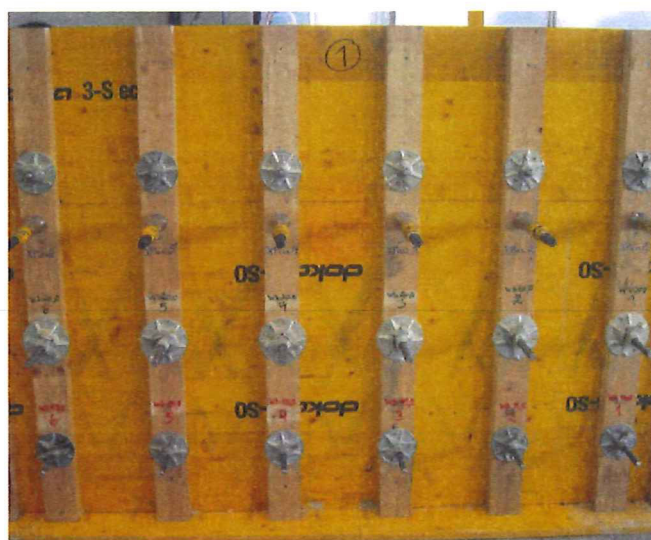
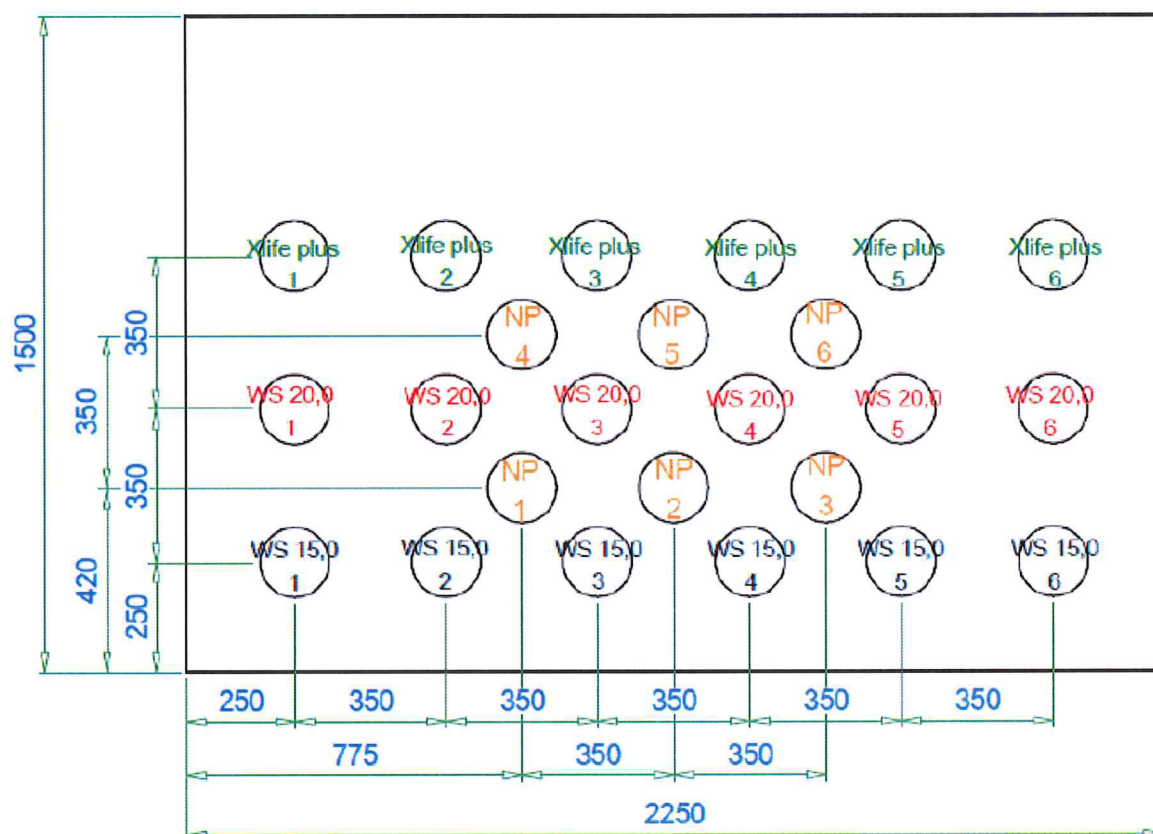


i.A. Dipl. Ing. Roland Murr

Head of Consulting Department

ATTACHEMENT 1 – PHOTO DOCUMENTATION

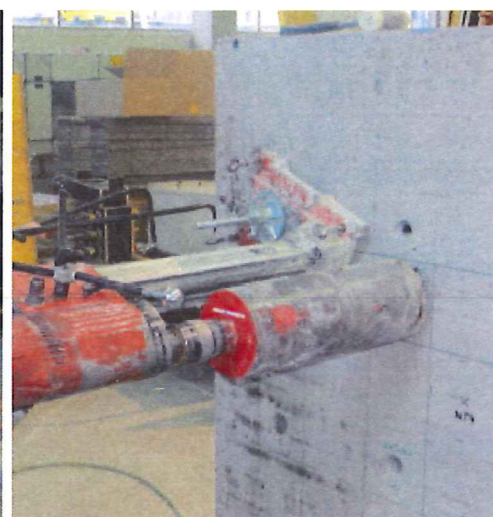
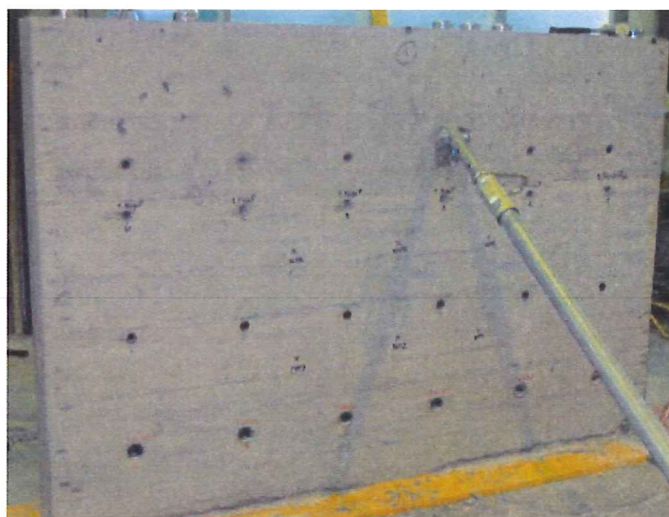
A1 – Casting of the test walls, assembly of the form-ties



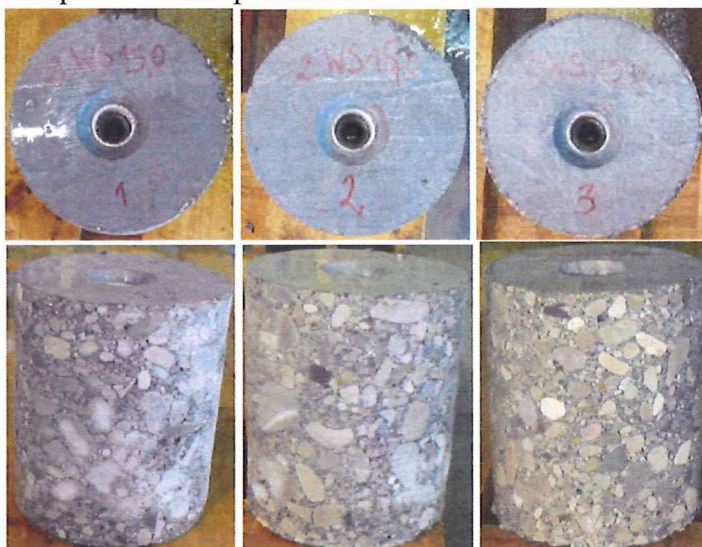
A2 – Concrete placement



A3 – Core drilling of the specimen



Samples Waterstop 15.0



Samples Waterstop 20.0



Reference Samples



A4 – Test procedure

