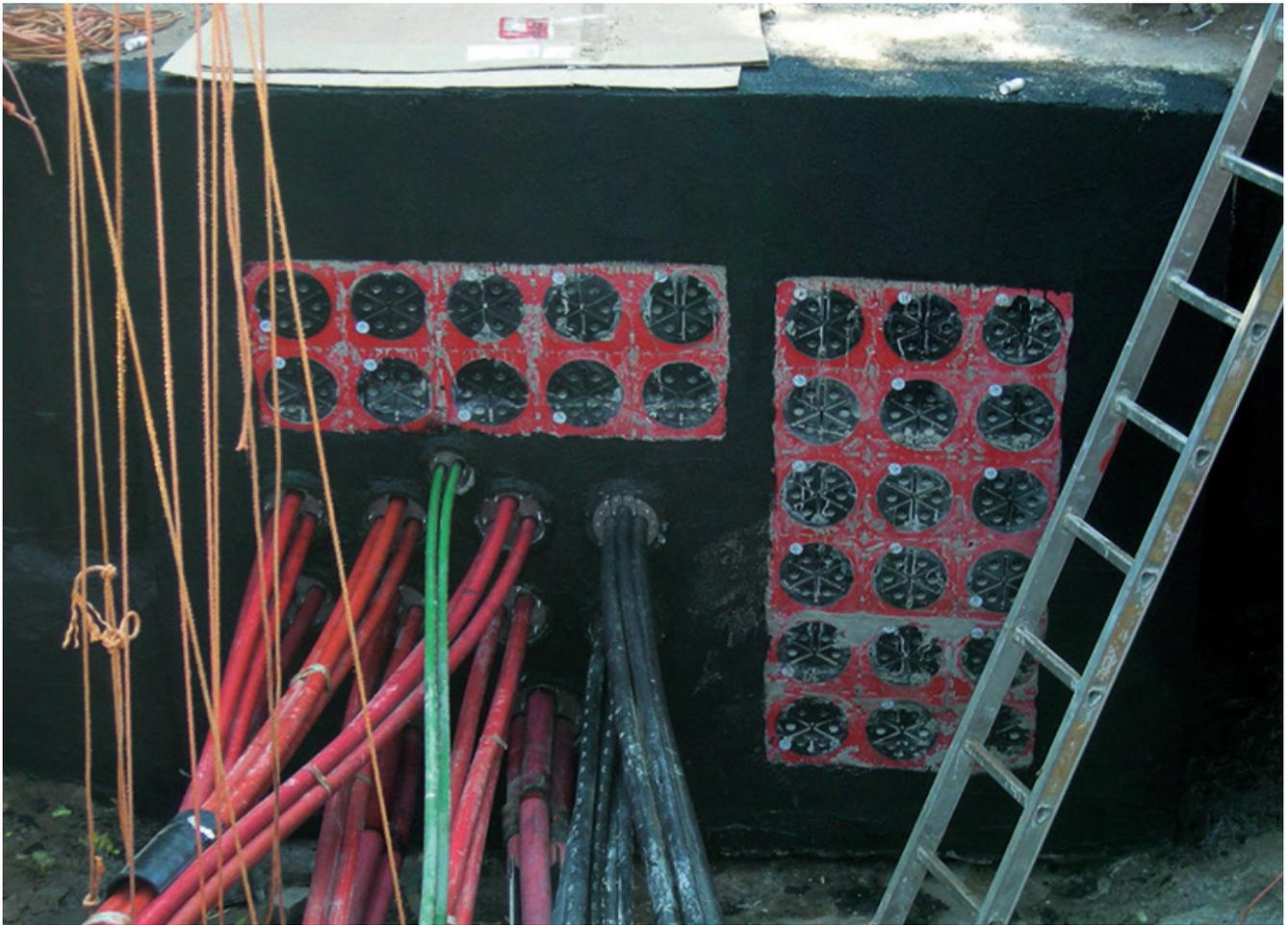


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SUBSEQUENT SEALING OF ALREADY INSTALLED CABLES WITH CABLE DUCT CONNECTION AND INSTALLATION OF CABLE ENTRIES FOR LATER USE

## DÜCKER OF N-ERGIE, NÜRNBERG

## INSTALLATION OF SPLIT WALL SLEEVES



Siphon water intake before redevelopment: water ingress between wall sleeves and cables and between wall sleeves and wall.



Siphon water intake after redevelopment: spare openings were created. Split wall sleeves were installed around the cables already laid which ensured the tightness between wall, wall sleeves and cables.



An opening was created around the existing cables and wall sleeves and a split wall sleeve was installed around each cable system.



Installation of the split fibre cement sleeves FZR-G.

## Spare openings with cable duct connection and sealing of the existing cables

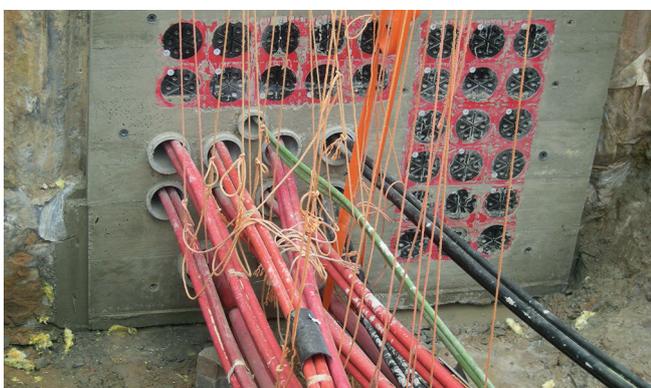
### INSTALLATION OF THE CABLE ENTRIES



The cable systems were fixed with ropes to secure them in the correct position within the framework.



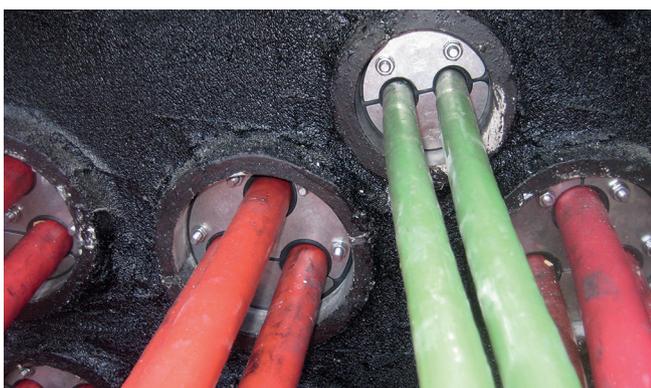
Installation of wall inserts HSI 150-K2 and the split wall sleeves FZR-G.



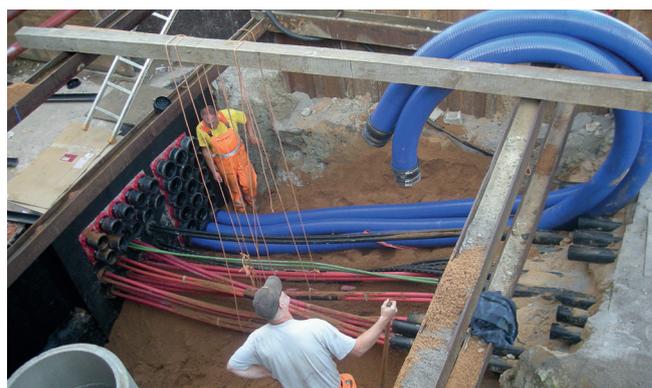
When the framework was removed, the perfect casting of the concrete became visible.



The wall of the siphon water intake was treated with a plastic modified thick coating.



All cables were subsequently sealed in the wall sleeves with customized HRD press seals.



28 double wall inserts HSI 150-K2 were installed as spare openings. Flexible cable ducts KES-M 150 with nominal widths of 110 and 150 mm were connected to these wall inserts in order to be able to subsequently lay cables without extensive civil construction works. The cable duct systems were sealed with sleeves.

## PROJECT INFORMATION

|                      |   |
|----------------------|---|
| Location             | Düker Sandreuth<br>Betriebsgelände – alte Müllverbrennung<br>90441 Nürnberg                               |
| Owner                | N-ERGIE Service GmbH<br>Ein Unternehmen der N-ERGIE Aktiengesellschaft<br>Am Plärren 43<br>90429 Nürnberg |
| Installation company | Xaver Schalk-Bau GmbH & Co. KG, Wendelstein<br>Nibler GmbH Fernleitungsbau, Stein bei Nürnberg            |

## SOLUTIONS BY HAUFF-TECHNIK

|               |  |
|---------------|--|
| Specification | Watertight sealing of existing cables going into manholes including spare entries.   |
| The challenge | Water ingress in a depth of approx. 4 m in an existing siphon water intake of approx. Ø 2.2 m due to untight cable entries and pipe runs (110 kV, 20 kV, optical fibre and telecommunication cables). The existing cable and pipe entries have to be subsequently sealed.  |
| The solution  | An opening was created in the siphon wall around the cable ducts. Split fibre cement wall sleeves were installed around the existing cables. 28 units cable entries HSI 150-K2 were placed in the framework and concreted in as spare openings. In order to be able to install cables at a later point in time without extensive civil construction works, flexible cable entry systems KES-M 150 (inner Ø 110 and 150 mm) were connected to the wall inserts HSI 150-K2. The cable entries were thus taken to the standard level. |

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