

OUR RANGE OF THE PRODUCT GROUP

## SHEAR DOWEL SYSTEMS

ETA-23/0180  
European Technical Assessment



### TRANSFER OF SHEAR FORCES – NOTHING'S EASIER

Just see, how easy a planned transfer of shear forces between reinforced concrete elements can be realized. Simple combinations of a dowel and a sleeve part each cover a wide range of applications and result in highly load-bearing, restraint-free and flexibly displaceable constructions. The ease of installation and mounting completes the systems. Overall, the shear dowel systems meet the highest requirements in regard to cost-effectiveness, quality and safety.

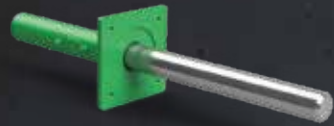


# » SHEAR DOWEL SYSTEMS

The „simplest“ combinations are the systems that allow only displacements in longitudinal directions (N), i. e. right-angled to the joint. In this way, joint widths of up to 60 / 120 mm (ESD / DB) can be bridged.

There are eight sleeve diameters in the product range, each of them available in different lengths and materials. Either of stainless steel or high-grade plastic the sleeves are made.

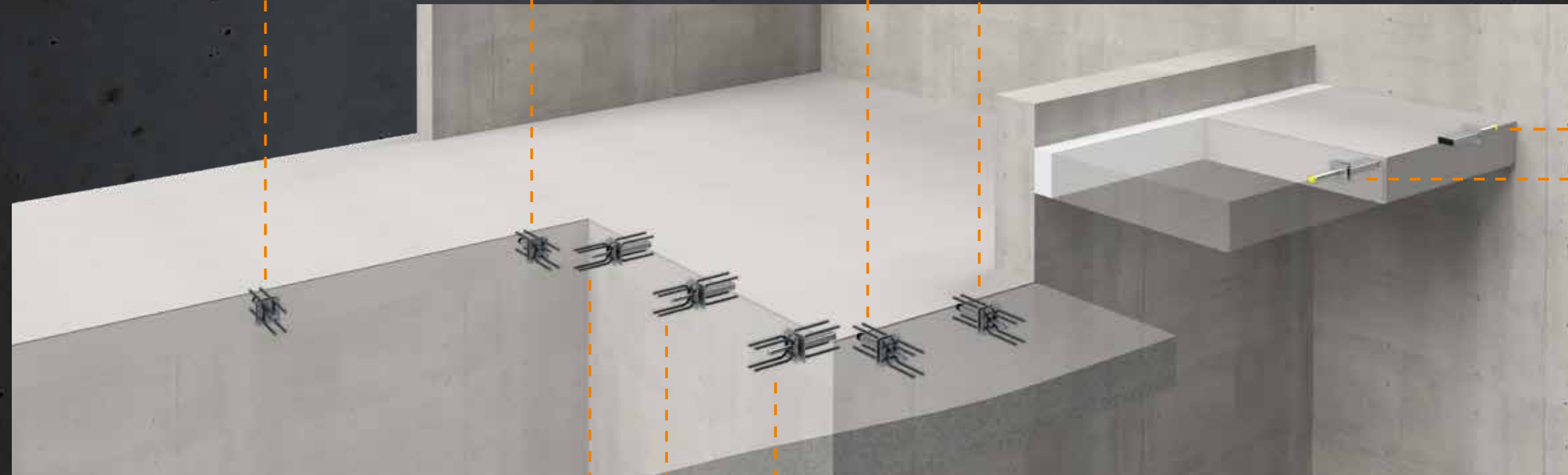
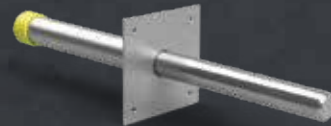
Sleeve ESD-NK  
Dowel ESD-N



Sleeve DB-N  
Dowel DB-N



Sleeve ESD-NE  
Dowel ESD-N



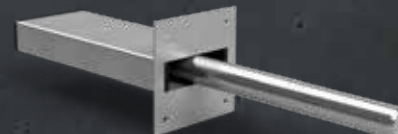
Sleeve ESD-Q E VR  
Dowel ESD-N



Sleeve DB-Q  
Dowel DB-N



Sleeve ESD-Q E  
Dowel ESD-N



If displacements should be possible both vertically (N) and in the direction of the joint (Q), so-called rectangular sleeves are available.

Here, displacements of up to  $\pm 12$  mm are possible, e. g. to avoid indirect actions in the state during construction. The attached reinforcing rings (VR, only with ESD) additionally ensure an increased force transfer of the rectangular sleeve in the concrete.

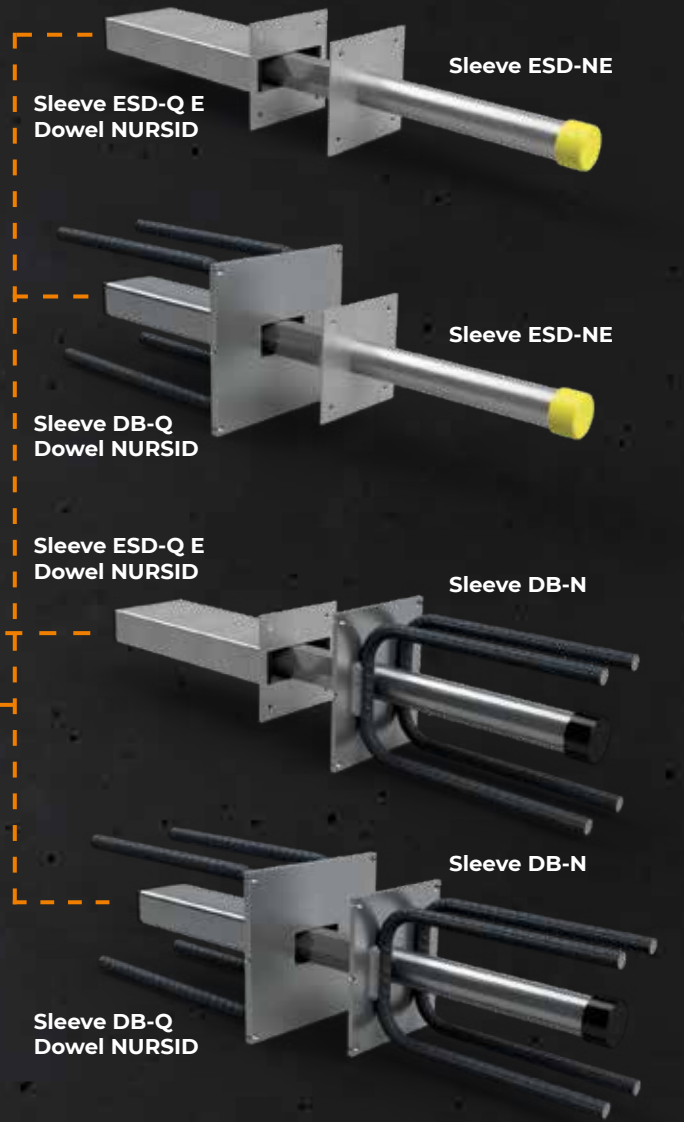
Basically, shear dowel systems are differentiated between

- » heavy-duty dowels (DB system) and
- » elementary shear dowels (ESD system).

Depending on the application, sleeves are also available for displacements in longitudinal direction (N) or in longitudinal and lateral (Q) direction. Regardless the type selected, these are approved (ETA-23/0180) and can be protected for the case of fire (REI 120) using fire protection collars.

A special connection transferring shear forces is the NURSID dowel. This consists of half a round steel and half a hexagonal profile and connects e. g. prefabricated balcony slabs, access galleries, etc. with the possibility of correcting installation tolerances in the height of up to 11 mm by means of an eccentrically arranged hexagonal dowel.

The NURSID dowel, which can be combined almost in any way with the ESD or DB system, is always longitudinally and laterally displaceable and bridges joints up to a width of 30 mm.



- » Two approved systems (ETA-23/0180):
  - » heavy-duty dowel DB  $\varnothing 20$  -  $\varnothing 40$ mm
  - » elementary shear dowel ESD  $\varnothing 16$  -  $\varnothing 35$ mm
- » Transfer of predominantly static shear forces
- » Various dowel materials available
- » Longitudinally and laterally displaceable sleeves available in stainless steel or plastic (ESD only)
- » Lateral displacement of up to  $\pm 12$  mm possible
- » Max. joint width of 60 mm (ESD) or 120 mm (DB) bridgeable
- » Fire protection collar for REI 120 fire resistance class
- » Special NURSID dowel for the transfer of shear forces with combined height compensation (11 mm)
- » Wide range of applications with simple installation at the same time

**Impressive product features – a technical and commercial comparison is well worth it!**

Our customers trust us to deliver.

We do everything in our power to reward their faith and we start each day intending to do better than the last.

We provide strength and stability in an ever-changing world.

## Welcome to the PHILIPP Group



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