

## **DSI Underground – Declaration of Performance**

No. HBS-2025-001 R51-800

**1. Product type:**

Self-drilling soil and rock nails

DSI® Hollow Bar System R51-800

**2. Intended use/es:**

Soil and rock nails are intended to stabilise soil and rock by the installation of passive tensile elements.

**3. Manufacturer:**

DSI Underground Austria GmbH  
Alfred-Wagner-Straße 1, 4061 Pasching / Linz, Austria

**4. System of assessment and verification of constancy of performance:**

1+

**5. European Assessment Document:**

EAD 160088-00-0102

**6. European Technical Assessment:**

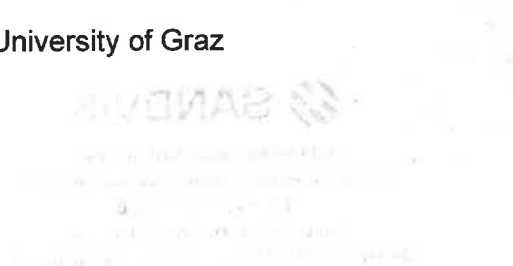
ETA-21/0869 of 2.8.2022

**7. Technical Assessment Body (TAB):**

Austrian Institute of Construction Engineering  
Schenkenstrasse 4, 1010 Vienna, Austria

**8. Accredited certification body (NB 1379):**

Technical University of Graz



## 9. Declared performance/s:

	Essential characteristic	Intended Use		
		Temporary Soil and Rock Nail	Permanent Soil and Rock Nail	
			Bare Soil and Rock Nail	Hot-dip galvanised Soil and Rock Nail
1	Resistance to static load of anchorages and coupler assemblies	$F_{p0.2, \text{nom}}$ : 640 kN, $F_{m, \text{nom}}$ : 800 kN, Slip at 65 % $F_{p0.2, \text{nom}}$ coupling: 0.9 mm, anchorage: 0.3 mm		
2	Resistance to fatigue of anchorages and coupler assemblies	$F_{p0.2, \text{nom}}$ : 640 kN, $2\sigma_a$ : 80 N/mm <sup>2</sup>		
3	Load transfer to structure	$f_{cm, 0}$ : 38 N/mm <sup>2</sup> , $F_{m, \text{nom}}$ : 800 kN		
4	Corrosion protection for temporary rock and soil nails	Cover of cement grout mortar $\geq 15$ mm Attachment 1, Figure 1	-	
5	Corrosion protection, sacrificial corrosion allowance for permanent rock and soil nails	-	Sacrificial corrosion Attachment 1, Figure 1, Attachment 1, Table 1	-
6	Corrosion protection, sacrificial corrosion allowance for hot-dip galvanised permanent rock and soil nails	-		Sacrificial corrosion Attachment 1, Figure 1, Attachment 1, Table 2
7	Impact energy and torque	$E_s$ : 190 Joule, $M_t$ : 2270 Nm to $E_s$ : 270 Joule, $M_t$ : 1700 Nm		
		Hollow bar of welded steel tube		
8	Shape	Figure 2		
9	Dimensions	Diameter External: 49.8 mm, Internal: 29.0 mm		
10	Surface geometry	Rope thread, pitch 12.7 mm, average thread height 1.6 mm, $f_R$ : 0.13		
11	Mass per metre	9.00 kg/m, deviation: - 4.5 % to + 12 %		
12	Cross sectional area	1150 mm <sup>2</sup>		
13	Strength characteristics	$F_{p0.2, \text{nom}}$ : 640 kN, $F_{m, \text{nom}}$ : 800 kN, $F_m/F_{p0.2}$ : $\geq 1.15$		
14	Elongation at maximum force	$A_{gt} \geq 5 \%$		
15	Modulus of elasticity	205 000 N/mm <sup>2</sup>		
16	Weld at flattening	No cracking at close flattening prior to rolling		
17	Weld at drift expansion	No cracking at relative expansion $\geq 110 \%$ with 60 ° mandrel prior to rolling		
18	Resistance to fatigue	$F_{p0.2, \text{nom}}$ : 640 kN, $2\sigma_a$ : 190 N/mm <sup>2</sup> , 2 000 000 cycles		
19	Bond strength	$\tau_{ak}$ : 5.1 N/mm <sup>2</sup> , $f_{cm}$ : 55 N/mm <sup>2</sup>		
20	Hot-dip galvanising	-	-	$\geq 85 \mu\text{m}$

The performance of the product identified above is in conformity with the set of declared performance/s.

Signed for and on behalf of the manufacturer by:

  
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Dipl.-Ing. Dominik Johannes Dendl

Pasching, on 15.04.2025