

# proceq

**Proceq DY-2**  
Pull-Off Testing



Swiss Precision since 1954

**The Proceq DY-2 family of automated pull-off testers covers the complete range of pull-off applications with unmatched ease of operation and a unique capability to store a complete record of the test.**

Pull-off testing is one of the most widely used test methods in the construction industry. This is reflected in the huge number of standards dedicated to the method.

It has long been known that one of the major influences on the result of a pull-off test is the operator influence in the application of a constant load rate. The DY-2 with its integrated, feedback controlled motor removes this variable completely, by providing a fully automated test at a constant load rate which can be verified.

The DY-2 is further unique in that it records every single test parameter required by the specification.

- Time and date of the test
- Test disc size
- Maximum load applied
- Automatic calculation of bond strength
- Applied load rate with graphical record
- Complete time of test
- Failure mode

For the very first time, the operator is able to provide a complete record of the pull-off test, proving that the test was carried out in accordance with the applicable standard.

## Application Range

Three versions of DY-2 are available differentiated by maximum pulling force. This covers the complete range of pull-off applications (examples for Ø 50mm test discs):

	Working Range		Maximum Pulling Speed
	Tensile Force	Test Disc Ø 50mm	
<b>DY-206</b>	0.6 - 6 kN	0.3 - 3.1 MPa	4.65 mm/min 0.183 inch/min
	135 - 1349 lbf	44 - 443 psi	
<b>DY-216</b>	1.6 - 16 kN	0.81 - 8.1 MPa	
	360 - 3597 lbf	118 - 1182 psi	
<b>DY-225</b>	2.5 - 25 kN	1.3 - 12.7 MPa	2.2 mm/min 0.086 inch/min
	562 - 5620 lbf	185 - 1847 psi	

Note: Below the working range, the accuracy is not guaranteed.

DY-206 has increased accuracy for low strength applications such as testing adhesive strength of mortars and renders. DY-216 covering most applications. DY-225 for very high strength applications such as testing of fibre reinforced polymers bonded to concrete structures or testing the bond strength of repair and overlay materials.

## Applicable Standards

To further illustrate the wide range of applications, DY-2 conforms to all of these standards: EN 1542, EN 1015-12, EN 1348, ISO 4624, BS 1881 Part 207, ASTM D4541, ASTM C1583, ASTM D7234-05, ASTM D7522, ZTV-SIB 90, JGJ126-2000, JGJ144-2004, JGJ110-2008.

Proceq DY-2 is calibrated according to EN ISO 7500-1 Annex C - Alternative Method of Testing Machine Classification.

The software necessary to calibrate the instrument is included in DY-Link.





Simple Operation

Select UNIT

lbf kN

PSI N/mm² MPa

Select size of TEST DISC

in 2.26

Select LOAD RATE

N/s 250

Start TEST

12346 10.12.12 14:36

25.0kN  
300N/s  
50.0mm  
1963mm²

RESULT

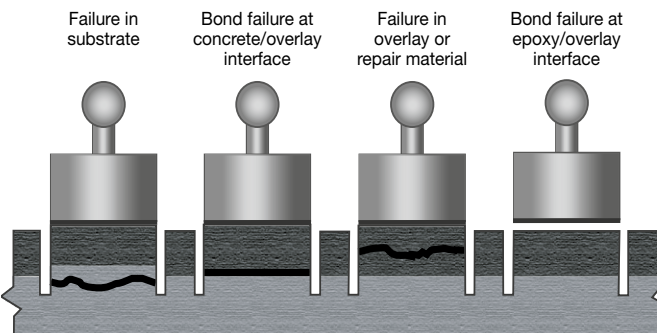
12346 10.12.12 14:36

9.3kN

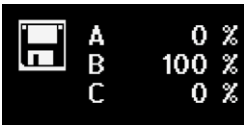
120.0s  
300N/s  
50.0mm  
1963mm²

Failure Mode Reporting

Most pull-off testing standards require the operator to record the mode of failure. DY-2 is unique in that it allows this information to be saved along with the test result.



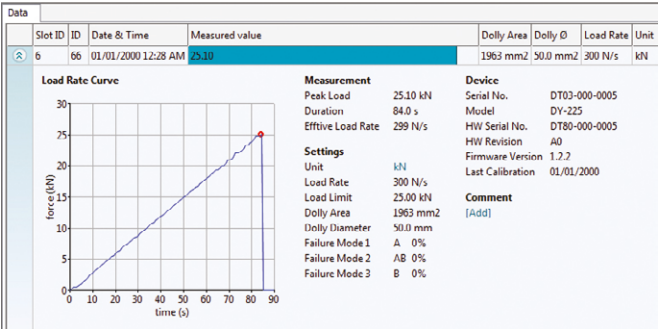
For example „B 100%“ indicates a complete failure in the overlay or repair material.



Complete Report of Load Rate:  
DY-Link Software

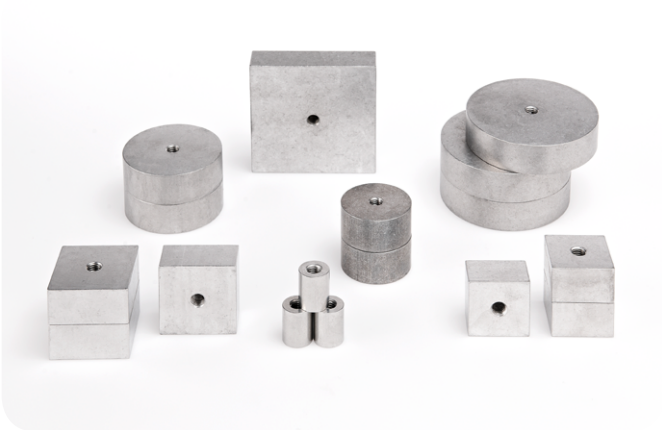
DY-2 provides documentary proof that the test was actually carried out with the specified load rate.

The load rate curve is saved along with the test results and may be downloaded to a PC for reporting, or it may also be viewed in real time if the DY-2 is connected to a PC during the test.



Complete Range of Test Discs

Depending on the application and material under test, the standards specify a wide range of test disc sizes. Proceq provides a complete range. The full list can be seen on the next page.



## Ordering Information

### DY-2 Units

PART NO.	DESCRIPTION
346 10 000	DY-206 Pull-off tester 6 kN (1349 lbf) including: battery pack, battery charger with USB-cable, test disc aluminium Ø 50mm/M10, draw bolt M10, torx screwdriver, software, operating instructions, certificate of conformity and carrying case
346 20 000	DY-216 Pull-off tester 16 kN (3597 lbf) including: battery pack, battery charger with USB-cable, test disc aluminium Ø 50mm/M10, draw bolt M10, torx screwdriver, software, operating instructions, certificate of conformity and carrying case
346 30 000	DY-225 Pull-off tester 25 kN (5620 lbf) including: battery pack, battery charger with USB-cable, test disc aluminium Ø 50mm/M10, draw bolt M10, torx screwdriver, software, operating instructions, certificate of conformity and carrying case

### Test Discs and Accessories

PART NO.	DESCRIPTION
346 10 500S	Test disc steel, Ø 50mm/M10, set of 10
346 10 501S	Test disc aluminum, Ø 50mm/M10, set of 10
346 10 502S	Test disc aluminum, Ø 20mm/M10, set of 10
346 10 503S	Test disc aluminum, 50x50mm/M10, set of 10
346 10 504S	Test disc aluminum, 40x40mm/M10, set of 10
346 10 505S	Test disc aluminum, Ø 100mm/M10, set of 3
346 10 506S	Test disc aluminum, 100x100mm/M10, set of 3

346 10 507S	Test disc aluminum, Ø 75mm/M10, set of 5
346 10 530	Adapter plate for large test discs
346 10 251	Battery pack complete
346 10 550	Fixing kit for vertical and overhead surfaces

### Technical Specifications

Max stroke	5 mm
Calibration accuracy	EN ISO 7500-1 Class 1 (±1% from 20% of max. Force)
Memory capacity	100 measurements
Battery capacity	1500 mAh, 3.7V (min. 80 measurements)
Charger connection	USB type A (5V, 500mA)
Weight	4.5 kg
Dimensions of housing	109 x 240 x 205.5 mm
Operating temperature	-10 to 50°C (14 to 122°F)
Storage temperature	-10 to 70°C (14 to 158°F)
IP classification	IP54

### Service and Warranty Information

Proceq is committed to providing complete support for the DY-2 testing instrument by means of our global service and support facilities. Furthermore, each instrument is backed by the standard Proceq warranty and extended warranty options.

Standard warranty:

- Electronic portion of the instrument: 24 months
- Mechanical portion of the instrument: 6 months

Subject to change without notice. All information contained in this documentation is presented in good faith and believed to be correct. Proceq SA makes no warranties and excludes all liability as to the completeness and/or accuracy of the information. For the use and application of any product manufactured and/or sold by Proceq SA explicit reference is made to the particular applicable operating instructions.

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