

Conklin Company Inc. TECHNICAL BULLETIN

B-11-89-24

Screw Withdrawal Test

Purpose

This technical bulletin is provided by Conklin Company Inc. in cooperation with Trufast Construction Fasteners with references from (ANSI) American National Standard and (SPRI) Single Ply Roofing Industry. This standard provides procedures used in the field to test the pullout resistance of all types of fasteners. The data developed from these tests provide the roof system manufacturer, design professional, and other practitioners with pullout resistance values for the specific fastener installed into the load resisting material of the deck. (See table #1)

Trufast

Withdrawal tests are commonly performed by fastener manufacturers such as the Tru Fast Manufacturing Company. For additional information regarding approved fasteners and tools used for performing pull tests contact the Conklin roofing division or Trufast direct.

Testing

Conklin Company Inc. recommends that Trufast be contacted for help with testing during your bidding process. The results of these tests will determine what kind of fastener will be used and how many fasteners will be required for the job. For more information about test procedures please see American National Standard, "Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners. (See forms below)

Equipment

The pullout tester will have either a hydraulic or electronic load cell and a gauge that displays values in lbf (kN) or psi (kPa). There are conversion formulas provided on the example forms below.

END OF SECTION



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Table #1

Conklin Recommended Withdrawal Values		
Deck Material	Trufast Recommended fastener	Conklin required average values
22-gauge Steel	Contact Trufast	300 lbs.
24-gauge Steel	Contact Trufast	350 lbs.
1/2" Plywood	Contact Trufast	300 lbs.
1/2" OSB	Contact Trufast	300 lbs.
1" Wood Plank	Contact Trufast	400 lbs.
Tectum	Contact Trufast	300 lbs.
Poured Gypsum 2"	Contact Trufast	250 lbs.
Lightweight Concrete	Contact Trufast	400 lbs.
Structural Concrete (1" embedded depth)	Contact Trufast	900 lbs.



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Form A Pull Out Test Report

(Refer to the Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners for full documentation)

Report results on reverse side.

Job name:	
Location:	
Test date: / /	Ambient temperature: °
Roof area: Sq. ft	Tester mfg:
Max. cap. of tester:	Select one: <input type="checkbox"/> lbf <input type="checkbox"/> kN
Date of last calibration: / /	Number of pulls recorded on Form B:
Fastener tested:	Fastener manufacturer:
Fastener tested:	Fastener manufacturer:
Fastener tested:	Fastener manufacturer:
Test performed by:	
Witnessed by:	Test cut areas repaired by:
Project type (select one): <input type="checkbox"/> New construction <input type="checkbox"/> Tear off <input type="checkbox"/> Retrofit	
Deck type (select one):	
<input type="checkbox"/> Steel	Gauge:
<input type="checkbox"/> Structural concrete	Thickness: Select one: <input type="checkbox"/> Poured in place <input type="checkbox"/> Precast
<input type="checkbox"/> Lightweight concrete	Thickness:
<input type="checkbox"/> Insulating concrete	Thickness:
<input type="checkbox"/> Cementious wood fiber	Thickness:
<input type="checkbox"/> Gypsum	Thickness: Select one: <input type="checkbox"/> Poured in place <input type="checkbox"/> Precast
<input type="checkbox"/> Wood	Thickness: Select one: <input type="checkbox"/> OSB <input type="checkbox"/> Plywood <input type="checkbox"/> Plank
<input type="checkbox"/> Fiberglass	Thickness:
<input type="checkbox"/> Other: _____	Thickness:
Embedment or protrusion:	
Drill bit diameter, where applicable:	
Optional Information	
Test time:	Building height: Thickness of existing roof assembly:
New system manufacturer:	
Roof cover type (select one):	
<input type="checkbox"/> Mechanically attached single-ply	<input type="checkbox"/> Modified bitumen
<input type="checkbox"/> Ballasted single-ply	<input type="checkbox"/> Built-up roofing
<input type="checkbox"/> Adhered single-ply	<input type="checkbox"/> Other: _____
New insulation:	
Type:	Thickness:



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Form B Pull Out Test Report

Report all test results and units of measure.

Conversion formulas

$$\text{lb} \times .00448222 = \text{kN} \times 224.8089431 = \text{lb}$$

$$\text{psi} \times 6.895 = \text{kPa} \times 0.145 = \text{psi}$$

1.	6.	11.	16.
2.	7.	12.	17.
3.	8.	13.	18.
4.	9.	14.	19.
5.	10.	15.	20.

Pullout Results of Additional Tests Performed 4.5.

1.	6.	11.	16.
2.	7.	12.	17.
3.	8.	13.	18.
4.	9.	14.	19.
5.	10.	15.	20.

Deviation from standard procedure authorized by:

Reason for deviation:

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Disclaimer: Manufacturer's installation requirements shall be followed when using any of the tested fasteners. Neither the technician performing the pullout tests nor his/her company is responsible for the waterproofing integrity of the repairs. This test report does not certify the structural integrity of the roof deck.

