

European Technical Assessment

ETA-15/0406
of 21.05.2025

General Part

**Technical Assessment Body issuing the
European Technical Assessment:**

SINTEF AS by its institute SINTEF Community

**Trade name of the construction
product**

FIXFAST SureFast Fastening System

**Product family to which the construction
product belongs**

Fasteners for mechanically fastened flexible
roof waterproofing systems

Manufacturer

FIXFAST Ltd
Unit 6
Frank Sando Way
Aylesford
Kent
ME20 7NY
United Kingdom

Manufacturing plant(s)

FIXFAST Ltd
Unit 6, Frank Sando Way, Aylesford
Kent, ME20 7NY, United Kingdom

**This European Technical Assessment
contains**

15 pages including 2 Annexes which form an
integral part of this assessment

**This European Technical Assessment is
issued in accordance with Regulation
(EU) No 305/2011, on the basis of**

EAD 030351-00-0402, February 2019 -
Systems of mechanically fastened flexible roof
waterproofing sheets

This version replaces

ETA 15/0406 of 09.12.2019

Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and should be identified as such.

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1. Technical description of the product and intended use

FIXFAST SureFast flat roofing fastening system is a system for mechanical fastening of insulation, of bitumen-based multi-layer, of single-ply waterproofing membranes, or polymeric single-ply waterproofing membranes for flat roofing. The supporting roof structure may be of steel, concrete, lightweight concrete or wood as defined in EAD 030351-00-0402, Systems of Mechanically Fastened Flexible Roof Waterproofing Membranes, paragraph 1.1.

The range of fasteners consists of seven different screws, seven steel washers and four tube washers as illustrated in Annex 1.

The fastener system is introduced to the market separately from the other components of roof waterproofing membrane kits, and this ETA covers only the performance characteristics of the FIXFAST SureFast Fastening System. A separate ETA according to EAD 030351-00-0402 is necessary in order to cover an entire kit for mechanically fastened roof waterproofing membranes.

The fasteners may be used for all types of flexible membranes. The supporting roof structure may consist of profiled steel decks, concrete, or a wood-based constructions. FIXFAST SureFast Fastening System may be used with membranes installed on a thermal insulation material or directly to the supporting roof substrate.

The provisions made in this ETA are based on an assumed working life of the component of at least 10 years. The actual working life is also dependent on the design of the roof and the waterproofing systems.

2. Specification of the intended use in accordance with the applicable European Assessment Document (hereinafter EAD)

2.1 General

The fasteners must be installed according to the manufacturer's instructions. The type of fastening shall be chosen depending on the type of substrate. It is the manufacturer's responsibility to provide correct information about the application of the product.

Fasteners with plate washers may be used with stiff build-up materials, for example directly on wood-based roof substrates, concrete or with non-compressible insulation.

Steel washers used with screws having secondary threading to hold them in place beneath the head can be used together with thermal insulation. The insulation material should have a compressive strength ≥ 60 kPa at 10% deformation according to EN 826.

Care should be taken during design to ensure that bimetallic corrosion between metal parts, especially between substrate and screw, does not occur. Likewise, the use of insulation materials containing substances which can affect the performance of the fasteners must be avoided.

It is recommended to perform an on-site pull-out test to check if satisfactory fixing can be achieved for the fastener into the actual substrate.

The following section 2.2 sets out assumptions and requirements for the substrate itself, as well as any requirements for pre-drilling.

Section 3 deals with the fastening's performances depending on which substrate i.e. timber-based, concrete and metal decks.

2.2 Fastening in substrates

- *Fastening in timber-based construction*

Products from the *FIXFAST SureFast Fastening System* for use in timber-based (wooden) substrates can be found in Annex 1. See Annex 2, Table 4 for the performance of these products in timber-based substrates.

Minimum thickness for plywood and OSB substrates is 18 mm. Other types of timber-based substrates shall be at least 25 mm thick.

- *Fastening in concrete*

Products from the *FIXFAST SureFast Fastening System* for use in concrete substrates can be found in Annex 1. See Annex 2, Table 3 for the performance of these products in concrete substrates.

The drill hole diameter for fixing concrete screws must be normally 5 mm. The drill hole depth should be normally minimum 30 mm, unless special precautions are taken regarding installation control and inspection. Minimum anchorage depth shall be normally minimum 25 mm. Fixings in 40 mm thick concrete without penetration requires drilling with depth control. Concrete compression strength is normally minimum class C25 according to EN 206.

- *Fastening in metal decks*

Products from the *FIXFAST SureFast Fastening System* for use in metal decks can be found in

Annex 1. See Annex 2, Table 2 for the performance of these products in metal decks.

Load bearing decks made of profiled steel sheets shall have a minimum thickness of 0.7 mm. In particularly exposed areas the recommended minimum thickness is 0.8 mm for fixing roofing membranes to the steel decks.

3. Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BRW 1)

Not relevant to be assessed under this Basic Works Requirement 1 but see sub-section 3.7.2 below.

3.2 Safety in case of fire (BRW 2)

No performance assessed. This characteristic is not relevant for fasteners itself.

3.3 Content, emission and/or release of dangerous substances (BRW 3)

According to the manufacturer's declaration, no corrosion protection used on any screws or washers contains *Chromium (VI) compounds*.

Consequently, the product does not contain dangerous substances according to the EU-database. The leaching properties to soil and water is assessed not to be relevant. Likewise, the emission properties to indoor environment.

3.4 Safety in use (BRW 4)

3.4.1 Fastener axial load

The fasteners have been tested for axial pull out performance from substrates, see Annex 2. The fasteners have also been tested for wind uplift according to EN 16002:2010 / ETA Guideline No. 006 edition March 2000, amended November 2012, and EAD 030351-00-0402. The wind uplift performance of roof waterproofing kits is mainly determined by the roofing membranes. Several full scale wind load tests with bituminous and polymeric membranes have been executed. The membranes are fixed with washers in combination with fixings to substrates of steel, wood and concrete.

3.4.2 Resistance to unwinding

The fasteners have been on the market for more than 10 years. The manufacturer doesn't have any knowledge of any problems with unwinding of the screws mentioned in this document. Based on all types of empirical data the screws are assessed to be safe against unwinding.

3.4.3 Mechanical resistance /brittleness of plastic fastener

The plastic tubes have satisfactory resistance to brittleness according to EAD 030351-00-0402, section 2.2.3.3.

3.4.4 Resistance to corrosion of metallic fastener(s)

All steel screws and steel washers that are components in the FIXFAST SureFast flat roofing fastening system have corrosion resistance corresponding to the requirements of EAD 030351-00-0402, Annex 2, section A2.4.

Carbon steel screws have FIXFAST's coating for corrosion protection, and carbon steel washers are galvanised; these items are further tested for corrosion resistance. Test-procedure for these products is 15 exposure cycles (humid atmosphere, 2 litres of sulphur dioxide).

3.4.5 Mechanical resistance after heat ageing of plastic fasteners

The tube washers, made of polypropylene, satisfies the aspects of durability according to EAD 030351-00-0402, Annex A, section A.2.3.

3.5 Protection against noise (BRW 5)

Not relevant

3.6 Energy consumption and heat retention (BRW 6)

Not relevant

3.7 Aspects of durability

See section 3.4 above where most sub-sections are dealing with material properties/performances, resistance to environmental exposure, etc.

3.8 Identification

The characteristic values of detailed product dimensions and respective tolerances are stated in the manufacturer's technical dossier and form a part of the control plan for the factory production control. All fasteners, plastic tube washers and steel washers are marked with a "SF" mark. The "SF" marking of the fasteners can be combined with the FIXFAST name or another brand name for products produced under private label. All packaging is to be marked with product type and batch number.

See also Annex 2 for characteristics that provide a basis for identifying the product.

4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base

According to Decision 98/143/EC by the European Commission, the system 2+ of assessment and verification of constancy of performance applies. See Annex V to Regulation (EU) No. 305/2011.

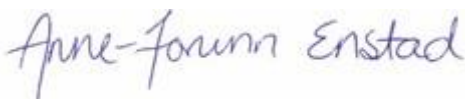
5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposit at SINTEF.

Issued in Oslo on 21.05.2025

By

SINTEF AS by its institute SINTEF Community



Anne-Jorunn Enstad

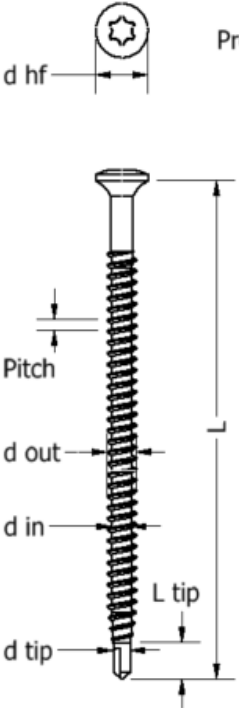
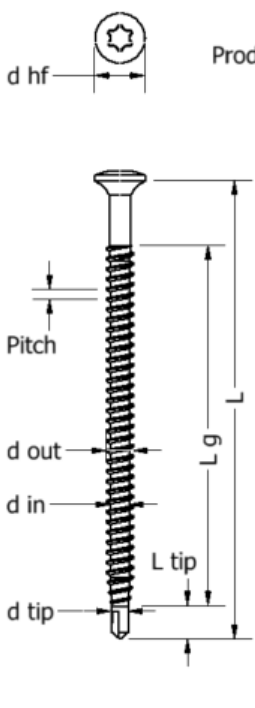
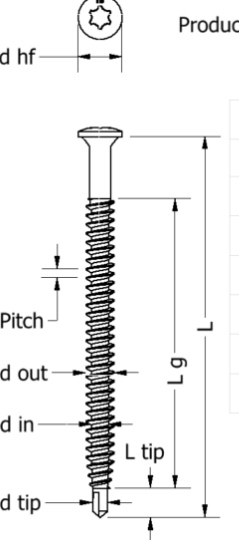
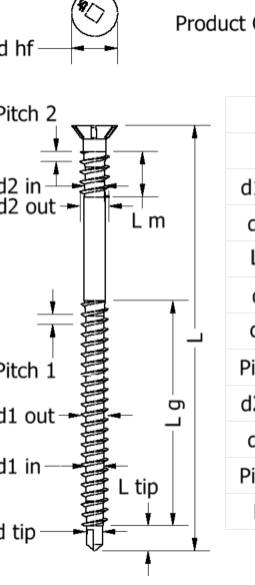
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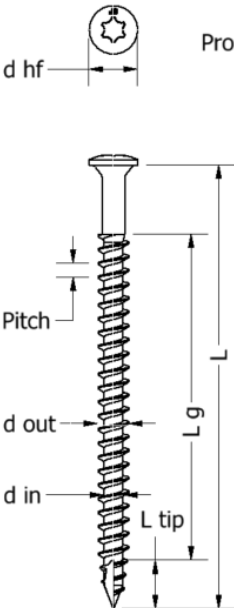
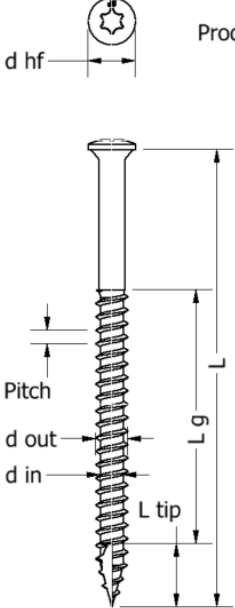
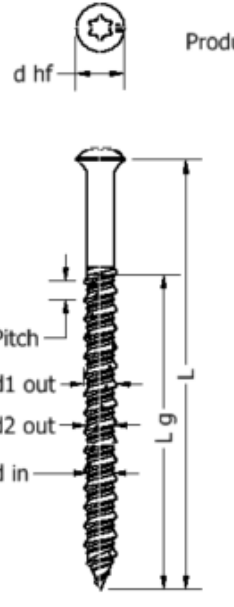
Annex 1

Description of FIXFAST SureFast Fastening System

Table 1

Fastener type	Fig. no.	Function	Material
SF-RS-4.8	1	Steel- and wood screw	Coated carbon steel
SF-RS-SSA4-	2	Steel- and wood screw	Bi-metal 316 stainless steel
SF-RS-5.8	3	Steel- and wood screw	Coated carbon steel
SF-RS-CL-5.2	4	Steel and wood screw (for fixing	Coated carbon steel
SF-RS-HCR-5.8	5	Aluminium or steel decks and wood substrates	1.4529 grade stainless steel (High corrosion resistance)
SF-RS-6.1	6	Concrete- and wood screw	Coated carbon steel
SF-RS-SSA4-	7	Concrete screw	Bi-metal 316 stainless steel
SF-P-8240-S	8	Steel washer	Galvanized steel
SF-P-8240-D	9	Steel washer	Galvanized steel
SF-P-70-D	10	Steel washer	Galvanized steel
SF-P-70-F	11	Steel washer	Galvanized steel
SF-P-40-F	12	Steel washer	Galvanized steel
SF-P-SSA4-40	13	Steel washer	Stainless steel
SF-P-SS-70-D	14	Steel washer	Stainless steel
SF-T-50	15	Tube washer	Polypropylene
SF-TB-50	16	Tube washer	Polypropylene
SF-T-75	17	Tube washer	Polypropylene
SF-T-LP-75	18	Tube washer	Polypropylene

 <p>Product Code: SF-RS-4.8 x L</p> <table border="1" data-bbox="486 470 790 806"> <thead> <tr> <th>L</th><th>Length</th></tr> </thead> <tbody> <tr> <td>d out</td><td>4.90 mm</td></tr> <tr> <td>d in</td><td>3.40 mm</td></tr> <tr> <td>L tip</td><td>7 mm max</td></tr> <tr> <td>d hf</td><td>9.0 mm</td></tr> <tr> <td>d tip</td><td>2.92 mm</td></tr> <tr> <td>Pitch</td><td>1.80 mm</td></tr> </tbody> </table>	L	Length	d out	4.90 mm	d in	3.40 mm	L tip	7 mm max	d hf	9.0 mm	d tip	2.92 mm	Pitch	1.80 mm	 <p>Product Code: SF-RS-SSA4-4.8 x L</p> <table border="1" data-bbox="1109 470 1396 828"> <thead> <tr> <th>L</th><th>Length</th></tr> <tr> <th>Lg</th><th>Thread Length</th></tr> </thead> <tbody> <tr> <td>d out</td><td>4.91 mm</td></tr> <tr> <td>d in</td><td>3.40 mm</td></tr> <tr> <td>L tip</td><td>7 mm max</td></tr> <tr> <td>d hf</td><td>9.0 mm</td></tr> <tr> <td>d tip</td><td>2.92 mm</td></tr> <tr> <td>Pitch</td><td>1.80 mm</td></tr> </tbody> </table>	L	Length	Lg	Thread Length	d out	4.91 mm	d in	3.40 mm	L tip	7 mm max	d hf	9.0 mm	d tip	2.92 mm	Pitch	1.80 mm										
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<p>Fig. 5 SF-RS-HCR-5.8 Screw for fixing in aluminium, steel and wood (Figure: Fixfast)</p>	<p>Fig. 6 SF-RS-6.1 Screw for fixing in concrete and wood (Figure: Fixfast)</p>																												
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<p>Fig. 7 SF-RS-SSA4-6.1 Screw for fixing in concrete (Figure: Fixfast)</p>																													

<p>Fig. 8 SF-P-8240-S Steel washer</p>	<p>Fig. 9 SF-P-8240-D Steel washer</p>
<p>Fig. 10 SF-P-70-D Steel washer</p>	<p>Fig. 11 SF-P-70-F Steel washer</p>
<p>Figure 12 SF-P-40-F Steel washer (galvanised steel)</p>	<p>Figure 13 SF-P-SSA4-40 Stainless steel washer</p>

<p>Fig. 14 SF-P-SS-70-D Steel washer</p>	<p>Fig. 15 SF-T-50 Tube washer</p>
<p>Fig. 16 SF-TB-50 Tube washer</p>	<p>Fig. 17 SF-T-75 Tube washer</p>

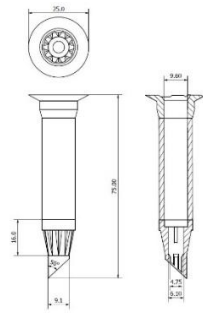


Fig. 18
SF-T-LP-75
Tube washer

Performance of FIXFAST SureFast Fastening system on different substrates

Characteristic values are calculated from the following formula:

$$\alpha(x_m - k \cdot s)$$

where: α = Corr. factor for tested substrate spec. compared with nominal substrate spec.

x_m = mean axial pullout load for 10 specimens

$k = 1.92$ (according to Table D1 in EN-1990:2002)

s = standard deviation

Table 2: Profiled metal decking substrate

Fastener type	Substrate	Characteristic values of the mechanical resistance, R_k	Failure mode
SF-RS-4.8	Steel 0.7 mm ¹⁾	1.17	Pull out from substrate
SF-RS-4.8	Steel 0.9 mm ¹⁾	1.89	Pull out from substrate
SF-RS-4.8	Steel 1.2 mm ¹⁾	2.42	Pull out from substrate
SF-RS-5.8	Steel 0.7 mm ¹⁾	1.43	Pull out from substrate
SF-RS-5.8	Steel 0.9 mm ¹⁾	1.93	Pull out from substrate
SF-RS-5.8	Steel 1.2 mm ¹⁾	2.87	Pull out from substrate
SF-RS-CL-5.2	Steel 0.7 mm ¹⁾	0.94	Pull out from substrate
SF-RS-HCR-5.8	Aluminium 0.9 mm ²⁾	1.07	Pull out from substrate
SF-RS-HCR-5.8	Aluminium 1.5 mm ²⁾	2.06	Pull out from substrate
SF-RS-CL-5.2	Steel 0.9 mm ¹⁾	1.47	Pull out from substrate
SF-RS-CL-5.2	Steel 1.2 mm ¹⁾	2.05	Pull out from substrate
SF-RS-SSA4-	Steel 0.7 mm ¹⁾	1.08	Pull out from substrate
SF-RS-SSA4-	Steel 0.9 mm ¹⁾	1.45	Pull out from substrate
SF-RS-SSA4-	Steel 1.2 mm ¹⁾	2.24	Pull out from substrate
SF-RS-6.1	Steel 0.7 mm ¹⁾	1.16	Pull out from substrate

¹⁾ Steel sheets, galvanized. Grade S280 and S350 according to EN 10346 have to be used

²⁾ Tensile strength for aluminium (R_m): 241 MPa

Table 3: Concrete substrate

Fastener type	Substrate	Characteristic values of the mechanical resistance, R_k	Failure mode
SF-RS-6.1	Concrete C25/30 ¹⁾	2.24	Pullover between steel washer SF-P-8240-F and screw
SF-RS-SSA4-6.1	Concrete C25/30 ¹⁾²⁾	2.66	Pullover between steel washer SF-P-70-F and screw
SF-RS-SSA4-6.1	Concrete C25/30 ¹⁾²⁾	3.61	Pull out from substrate. No steel washer was used in the test

¹⁾ Nominal characteristic values based on concrete strength. Concrete qualities C32/40, C25/30:

- α is determined according to ETAG 001 chapter 6.0 as follows:
- $\alpha = (f_c/f_{c,test})^{0.5} \leq 1.0$ f_c = nominal compression strength of the concrete $f_{c,test}$ = compression strength of the concrete used for the test. $f_c = C32$ $f_{c,test} = C32$
- $\alpha = (f_c/f_{c,test})^{0.5} \leq 1.0$ f_c = nominal compression strength of the concrete $f_{c,test}$ = compression strength of the concrete used for the test. $f_c = C32$ $f_{c,test} = C32$

Nominal characteristic value (C32/40): 3613 N / $\alpha = (32/32)^{0.5}=1.0$

Nominal characteristic value (C25/30): 3194 N / $\alpha = (25/32)^{0.5}=0.884$

²⁾ The lowest value of the pull out and pullover should be used as the characteristic value for the application.

Table 4: Wood substrate

Fastener type	Substrate	Characteristic values of the mechanical resistance, R_k (kN)	Failure mode
SF-RS-4.8	18 mm plywood ¹⁾	2.40	Pull out from substrate
SF-RS-4.8	18 mm OSB ²⁾	1.03	Pull out from substrate
SF-RS-4.8	38 mm timber ³⁾	2.88	Pullover between steel washer SF-P-70 F and screw
SF-RS-4.8	38 mm timber	4.05 ⁷⁾	Pull out from substrate. No steel washer was used in the test
SF-RS-5.8	18 mm plywood ¹⁾	2.10	Pull out from substrate
SF-RS-5.8	18 mm OSB ²⁾	1.58	Pull out from substrate
SF-RS-5.8	38 mm timber ³⁾	4.06 ⁴⁾	Pull out from substrate. No steel washer was used in the test
SF-RS-CL-5.2	18 mm plywood ¹⁾	2.01	Pull out from substrate
SF-RS-CL-5.2	18 mm OSB ²⁾	1.52	Pull out from substrate
SF-RS-CL-5.2	38 mm timber ³⁾	4.23 ⁵⁾	Pull out from substrate. Two steel washers were used in the test
SF-RS-HCR-5.8	18 mm plywood ¹⁾	2.46	Pull out from substrate
SF-RS-HCR-5.8	38 mm timber ³⁾	2.76	Pullover between steel washer SF-P-70 F and screw
SF-RS-HCR-5.8	38 mm timber ³⁾	4.72 ⁷⁾	Pull out from substrate. No steel washer was used in the test
SF-RS-SSA4-4.8	18 mm plywood ¹⁾	1.77	Pull out from substrate
SF-RS-SSA4-4.8	18 mm OSB ²⁾	1.37	Pull out from substrate
SF-RS-SSA4-4.8	38 mm timber	3.89 ⁶⁾	Pull out from substrate. Two steel washers were used in the test
SF-RS-6.1	18 mm plywood ¹⁾	2.07	Pull out from substrate

¹⁾ Plywood to be in accordance with minimum specifications of EN 636:2012+A1:2015 ($t \geq 19$ mm exterior grade, minimum density 500 kg/m³)

²⁾ Roofing grade OSB/3 should be manufactured to EN 300 (minimum density 600 kg/m³)

³⁾ Softwood quality C-24 (mean density 420 kg/m³)

⁴⁾ To determine the characteristic value for the kit, compare the values given in table 5 (pullover) between SF-RS-5.8 and washer SF-P-8240-D. The lowest value of the pull out and pull over should be used as the characteristic value for the application.

⁵⁾ To determine the characteristic value for the kit, compare the values given in table 5 (pullover) between SF-RS-CL-5.2 and washer SF-P-8240-F. The lowest value of the pull out and pull over should be used as the characteristic value for the application.

⁶⁾ To determine the characteristic value for the kit, compare the values given in table 5 (pullover) between SF-RS-SSA4-4.8 and washer SF-P-8240-D. The lowest value of the pull out and pull over should be used as the characteristic value for the application.

⁷⁾ The lowest value of the pull out and pullover should be used as the characteristic value for the application.

Table 5: Pullover test and durability for the washers

Fastener type	Washer	Characteristic values of the mechanical resistance, R_k (kN)	Durability
SF-RS-SSA4-4.8	SF P-SS-70-D	5.50	Approved
SF-RS-5.8	SF P-SS-70-D	5.50	Approved
SF-RS-6.1	SF P-SS-70-D	5.50	Approved
SF-RS-SSA4-4.8	SF-SP-8240-D	3.06	Approved
SF-RS-CL-5.2	SF-P-8240-F	4.28	Approved
SF-RS-5.8	SF-SP-8240-D	3.06	Approved
SF-RS-6.1	SF-SP-8240-D	3.06	Approved
SF-RS-5.8	SF-T-50	1.55	Approved
SF-RS-SSA4-4.8 SF-RS-SSA4-4.8 SF-RS-6.1	SF-P-40-F	3.33	Approved
SF-RS-SSA4-4.8 SF-RS-SSA4-4.8 SF-RS-6.1	SF-P-SSA4-40	3.33	Approved

Obtained values from the axial load test in different substrates (table 2 - 4) and the pullover test (table 5) of washers/sleeves have to be compared and the lowest of the two gives the characteristic value for the fastener / sleeve, washer combination of the application.