

GENERAL INFORMATION

ULTRACON®+

Concrete Screw Anchor

PRODUCT DESCRIPTION

The UltraCon+ fastening system is a complete family of screw anchors for light to medium duty applications in concrete, masonry block, brick, and wood base materials. The UltraCon+ is fast and easy to install and provides a neat, finished appearance. The UltraCon+ screw anchor is engineered with matched tolerance drill bits and installation tools designed to meet the needs of the user and also provide optimum performance. The UltraCon+ features a gimlet point for self-drilling into wood base materials without pre-drilling.

The UltraCon+ screw anchor is available in carbon steel with a Stalgard coating. Head styles include a slotted hex washer head and Phillips flat.

GENERAL APPLICATIONS AND USES

- Window installations
- Shutters and guards
- Interior hand rails
- Interior lighting fixtures
- Metal door frames
- Thresholds
- Joint flashing
- Screened enclosures

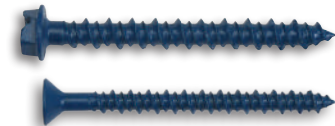
FEATURES AND BENEFITS

- + Removable (reusable in wood)
- + High-low thread design for greater stability and grip
- + Evaluated and qualified by an accredited independent testing laboratory for reliability against brittle failure, e.g. hydrogen embrittlement
- + Does not exert expansion forces
- + No hole spotting required
- + Good corrosion protection with Stalgard coating
- + Gimlet point for self drilling into wood base material

MATERIAL SPECIFICATIONS

Anchor Component	Specification
Anchor Body	Case hardened carbon steel
Coating/Plating/Finish	Stalgard® (Blue) 1000 hour rating for ASTM B117 salt spray test

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ULTRACON+

HEAD STYLES

- Slotted Hex Washer Head
- Phillips Flat Head

ANCHOR MATERIALS

- Carbon Steel with Stalgard Coating

ANCHOR SIZE RANGE (TYP.)

- 3/16" diameter x 1-1/4" (31.8mm) to 4" (101.6mm) lengths
- 1/4" diameter x 1-1/4" (31.8mm) to 6" (152.4mm) lengths

SUITABLE BASE MATERIALS

- Normal-weight Concrete

MAY BE SUITABLE BASE MATERIALS

- Lightweight Concrete
- Grouted Concrete Masonry
- Hollow Concrete Masonry (CMU)
- Solid Brick Masonry
- Wood

APPROVALS

- ICC-ES ESR-3068
- ICC-ES ESR-3196
- ICC-ES ESR-3042
- ICC-ES ESR-3213

MECHANICAL ANCHORS

ULTRACON®+
Concrete Screw Anchor

INSTALLATION SPECIFICATIONS

UltraCon+ Carbon Steel Slotted Hex Washer Head

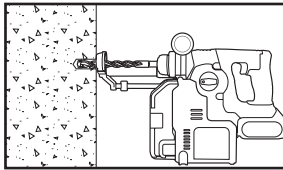
Dimension	Anchor Diameter, d	
	3/16"	1/4"
UltraCon+ Drill Bit Size, d_{bit} (in.)	5/32"	3/16"
Typ. Fixture Clearance Hole, d_h	1/4" (6.4mm)	5/16" (8.0mm)
Head Height	7/64" (2.8mm)	9/64" (3.6mm)
Hex Head Wrench/Socket Size	1/4"	5/16"
Washer O.D., d_w	11/32" (8.7mm)	13/32" (10.3mm)
Washer Thickness	1/32" (0.8mm)	1/32" (0.8mm)

UltraCon+ Carbon Steel Phillips Flat Head

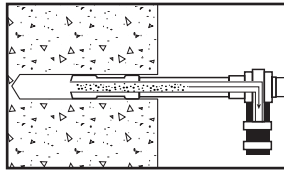
Dimension	Anchor Diameter, d	
	3/16"	1/4"
UltraCon+ Drill Bit Size, d_{bit}	5/32"	3/16"
Typ. Fixture Clearance Hole, d_h	1/4" (6.4mm)	5/16" (8.0mm)
Phillips Head O.D.,	3/8" (9.5mm)	1/2" (12.7mm)
Phillips Head Height,	9/64" (3.6mm)	3/16" (4.8mm)
Phillips Bit Size (No.)	2	3

In light gauge steel material (0.036" (1mm) and below), the clearance hole can be the same diameter as the drill bit.

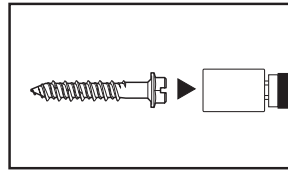
Installation Instruction for UltraCon+



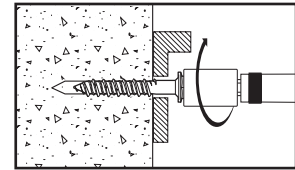
Step 1
Using the proper drill bit size, drill a hole into the base material to the required depth, h_p , which is 10mm deeper than the minimum embedment depth, h_{nom} .



Step 2
Remove dust and debris from the hole during drilling (e.g. dust extractor) or following drilling (e.g. suction, forced air) to extract loose particles created by drilling.



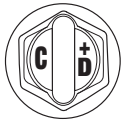
Step 3
Attach a UltraCon+ installation socket to a percussion drill and set the drill to rotary only mode. Mount the screw anchor head into the socket. For flat head versions a bit tip must be used with the socket tool.



Step 4
Place the point of the UltraCon+ through the fixture into the pre-drilled hole and drive the anchor in one steady continuous motion until it is fully seated at the proper embedment. The driver will automatically disengage from the head of the UltraCon+.

Head Marking

Slotted Hex Washer Head

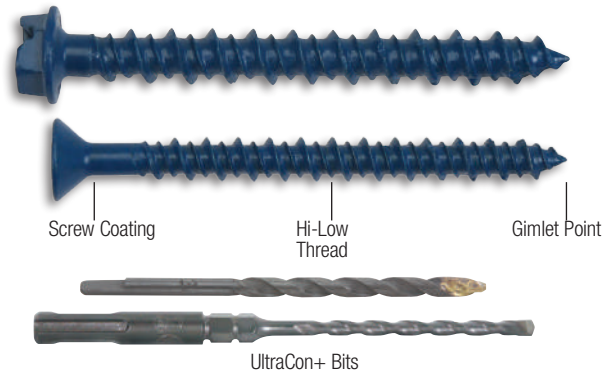


Phillips Flat Head



Legend
'D' Marking = UltraCon+
'C' Mark = Length Identification Mark

Matched Tolerance System



UltraCon+ Length Code Identification System

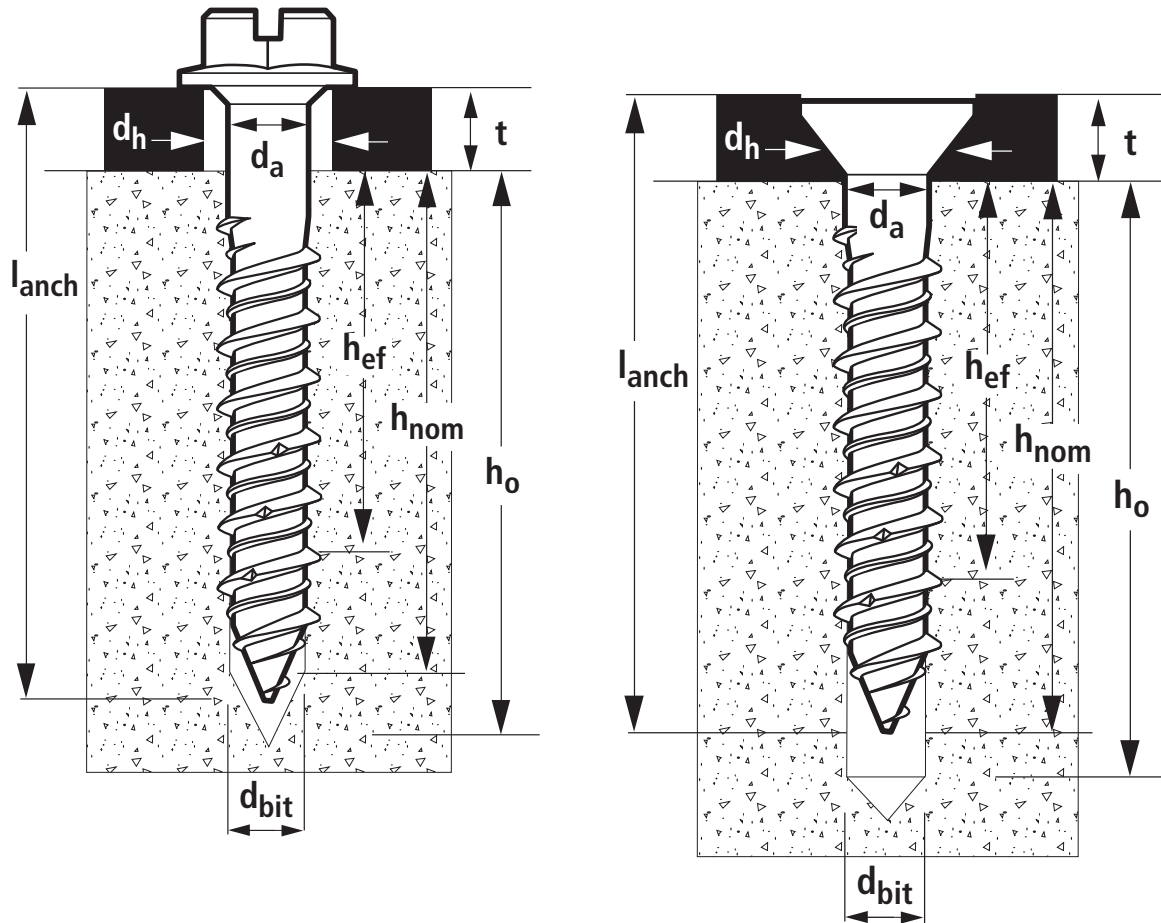
Length ID marking on head		□	A	B	C	D	E	F	G	H	I	J
Overall anchor length l_{anch}	From	1" (25.4mm)	1-1/2" (38.1mm)	2" (50.8mm)	2-1/2" (63.5mm)	3" (76.2mm)	3-1/2" (88.9mm)	4" (101.6mm)	4-1/2" (114.3mm)	5" (127mm)	5-1/2" (139.7mm)	6" (152.4mm)
	Up to but not including	1-1/2" (38.1mm)	2" (50.8mm)	2-1/2" (63.5mm)	3" (76.2mm)	3-1/2" (88.9mm)	4" (101.6mm)	4-1/2" (114.3mm)	5" (127mm)	5-1/2" (139.7mm)	6" (152.4mm)	6-1/2" (165.1mm)

Installation Table for UltraCon+ in Concrete^{1,2}

Anchor Property/Setting Information	Notation	Units	Nominal Anchor Size (in.)	
			3/16	1/4
Anchor outside diameter	d_a	in. (mm)	0.145 (3.7)	0.185 (4.7)
Nominal drill bit diameter	d_{bit}	in.	5/32 UltraCon+ Bit	
UltraCon+ bit tolerance range	-	in. (mm)	0.170 to 0.176 (4.3 to 4.5)	0.202 to 0.206 (5.1 to 5.2)
Minimum nominal embedment depth	h_{nom}	in. (mm)	1-3/4 (44)	1-3/4 (44)
Minimum hole depth	h_o	in. (mm)	2 (51)	2 (51)
Hex head socket size	-	in.	1/4	5/16
Phillips bit size (No.)	-	-	2	3
Maximum installation torque	T_{screw}	ft-lbs	Not applicable using UltraCon+ installation socket tool	

For SI: 1 inch = 25.4 mm, 1 ft-lbf = 1.356 N-m.
1. The minimum base material thickness must be $1.5h_{nom}$ or 3", whichever is greater.

UltraCon+ Anchor Detail



MECHANICAL ANCHORS

ULTRACON+[®]
Concrete Screw Anchor

CONCRETE PERFORMANCE DATA

Ultimate and Allowable Load Capacities for UltraCon+ in Normal-Weight Concrete^{1,2,3}

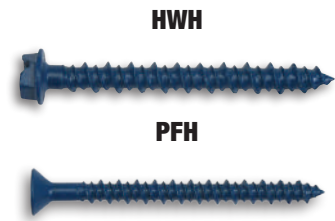
Nominal Anchor Diameter d in.	Minimum Embed. Depth h _{nom} in. (mm)	Minimum Edge Distance in. (mm)	Minimum Spacing in. (mm)	Minimum Concrete Compressive Strength											
				f'c =2,500 psi (17.3 MPa)				f'c =3,000 psi (20.7 MPa)				f'c =4,000 psi (27.6 MPa)			
				Ultimate		Allowable		Ultimate		Allowable		Ultimate		Allowable	
				Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
3/16	1-3/4 (44.4)	1 (25.4)	1 (25.4)	1,080 (4.8)	305 (1.3)	270 (1.2)	75 (0.3)	1,145 (5.0)	325 (1.4)	285 (1.3)	80 (0.4)	1,245 (5.5)	325 (1.4)	310 (1.4)	80 (0.4)
	1-3/4 (44.4)		1-1/8 (28.6)	1,190 (5.2)	305 (1.3)	295 (1.3)	75 (0.3)	1,255 (5.5)	325 (1.4)	315 (1.4)	80 (0.4)	1,370 (6.0)	325 (1.4)	340 (1.5)	80 (0.4)
	1-3/4 (44.4)		2-1/4 (57.2)	1,365 (6.0)	600 (2.6)	340 (1.5)	150 (0.7)	1,440 (6.3)	635 (2.8)	360 (1.6)	160 (0.7)	1,570 (6.9)	635 (2.8)	395 (1.7)	160 (0.7)
	1 (25.4)		3 (76.2)	580 (2.6)	435 (1.9)	145 (0.7)	110 (0.5)	615 (2.7)	460 (2.0)	155 (0.7)	115 (0.5)	670 (2.9)	460 (2.0)	170 (0.7)	115 (0.5)
	1-3/8 (34.9)			815 (3.6)	455 (2.0)	205 (0.9)	115 (0.5)	860 (3.8)	485 (2.1)	215 (1.0)	120 (0.5)	940 (4.1)	485 (2.1)	235 (1.0)	120 (0.5)
	1-3/4 (44.4)	3-3/8 (85.7)	1,365 (6.0)	600 (2.6)	340 (1.5)	150 (0.7)	1,440 (6.3)	635 (2.8)	360 (1.6)	160 (0.7)	1,570 (6.9)	635 (2.8)	395 (1.7)	160 (0.7)	
	1-3/4 (44.4)	2-1/2 (63.5)	1-1/8 (28.6)	1,465 (6.4)	1,200 (5.3)	365 (1.6)	300 (1.3)	1,550 (6.8)	1,265 (5.6)	390 (1.7)	315 (1.4)	1,690 (7.4)	1,265 (5.6)	425 (1.9)	315 (1.4)
	1-3/4 (44.4)		2-1/4 (57.15)	1,465 (6.4)	1,200 (5.3)	365 (1.6)	300 (1.3)	1,550 (6.8)	1,265 (5.6)	390 (1.7)	315 (1.4)	1,690 (7.4)	1,265 (5.6)	425 (1.9)	315 (1.4)
	1 (25.4)		3 (76.2)	580 (2.6)	640 (2.8)	145 (0.7)	160 (0.7)	615 (2.7)	680 (3.0)	155 (0.7)	170 (0.8)	670 (2.9)	680 (3.0)	170 (0.7)	170 (0.8)
	1-3/8 (34.9)			1,220 (5.4)	735 (3.2)	305 (1.4)	185 (0.8)	1,290 (5.7)	775 (3.4)	325 (1.4)	195 (0.9)	1,405 (6.2)	775 (3.4)	350 (1.6)	195 (0.9)
1-3/4 (44.4)	3-3/8 (85.7)		1,465 (6.4)	1,200 (5.3)	365 (1.6)	300 (1.3)	1,550 (6.8)	1,265 (5.6)	390 (1.7)	315 (1.4)	1,690 (7.4)	1,265 (5.6)	425 (1.9)	315 (1.4)	
1/4	1-3/4 (44.4)	1 (25.4)	1 (25.4)	1,205 (5.3)	340 (1.5)	300 (1.3)	85 (0.4)	1,295 (5.7)	370 (1.6)	340 (1.5)	95 (0.4)	1,455 (6.4)	370 (1.6)	365 (1.6)	95 (0.4)
	1-3/4 (44.4)		1-1/2 (38.1)	1,235 (5.4)	340 (1.5)	310 (1.4)	85 (0.4)	1,325 (5.8)	370 (1.6)	330 (1.5)	95 (0.4)	1,490 (6.6)	370 (1.6)	375 (1.7)	95 (0.4)
	1-3/4 (44.4)		3 (76.2)	1,720 (7.6)	495 (2.2)	430 (1.9)	125 (0.6)	1,850 (8.1)	530 (2.3)	465 (2.0)	135 (0.6)	2,075 (9.1)	530 (2.3)	520 (2.3)	135 (0.6)
	1 (25.4)		4 (101.6)	770 (3.4)	495 (2.2)	195 (0.9)	125 (0.6)	830 (3.7)	530 (2.3)	210 (0.9)	135 (0.6)	930 (4.1)	530 (2.3)	235 (1.0)	135 (0.6)
	1-3/8 (34.9)			1,105 (4.9)	640 (2.8)	275 (1.2)	160 (0.7)	1,190 (5.2)	690 (3.0)	300 (1.3)	175 (0.8)	1,335 (5.9)	690 (3.0)	335 (1.5)	175 (0.8)
	1-3/4 (44.4)	3 (76.2)	1,975 (8.7)	645 (2.8)	495 (2.2)	160 (0.7)	2,120 (9.3)	690 (3.0)	530 (2.3)	175 (0.8)	2,380 (10.5)	690 (3.0)	595 (2.6)	175 (0.8)	
	1-3/4 (44.4)	2-1/2 (63.5)	1-1/2 (38.1)	2,215 (9.7)	1,590 (7.0)	555 (2.4)	400 (1.8)	2,380 (10.5)	1,710 (7.5)	595 (2.6)	430 (1.9)	2,670 (11.8)	1,710 (7.5)	670 (3.0)	430 (1.9)
	1-3/4 (44.4)		3 (76.2)	2,200 (9.7)	1,635 (7.2)	550 (2.4)	410 (1.8)	2,365 (10.4)	1,755 (7.7)	590 (2.6)	440 (1.9)	2,650 (11.7)	1,755 (7.7)	665 (2.9)	440 (1.9)
	1 (25.4)		4 (101.6)	805 (3.5)	1,260 (5.6)	200 (0.9)	315 (1.4)	865 (3.8)	1,355 (6.0)	215 (1.0)	340 (1.5)	970 (4.3)	1,355 (6.0)	245 (1.1)	340 (1.5)
	1-3/8 (34.9)			1,755 (7.7)	1,750 (7.7)	440 (1.9)	440 (1.9)	1,885 (8.3)	1,885 (8.3)	470 (2.1)	470 (2.1)	2,115 (9.3)	1,885 (8.3)	530 (2.3)	470 (2.1)
1-3/4 (44.5)	2,125 (9.4)		1,395 (6.1)	530 (2.4)	350 (1.5)	2,285 (10.1)	1,500 (6.6)	570 (2.5)	375 (1.7)	2,565 (11.3)	1,500 (6.6)	640 (2.8)	375 (1.7)		

1. Tabulated Ultimate load values are tested mean strengths for anchors installed in concrete. Concrete compressive strength must be at the specified minimum at the time of installation.
2. Allowable load capacities listed are calculated using an applied safety factor of 4.0. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety or overhead.
3. Linear interpolation may be used to determine allowable loads for intermediate compressive strengths.

ORDERING INFORMATION

Blue UltraCon+ Standard Pack

Cat. No.		Screw Size (Inch)	Screw Size (mm)	Quantity	
HWH	PFH			Box	Carton
DFM12700	DFM12740	3/16" x 1-1/4"	4.8 x 31.8	100	500
DFM12702*	DFM12742	3/16" x 1-3/4"	4.8 x 44.4	100	500
-	DFM12744	3/16" x 2-1/4"	4.8 x 57.2	100	500
DFM12706	DFM12746	3/16" x 2-3/4"	4.8 x 69.9	100	500
DFM12708	DFM12748	3/16" x 3-1/4"	4.8 x 82.6	100	500
DFM12712	DFM12752	3/16" x 4"	4.8 x 101.6	100	500
DFM12720	DFM12760	1/4" x 1-1/4"	6.4 x 31.8	100	500
DFM12722*	DFM12762	1/4" x 1-3/4"	6.4 x 44.4	100	500
DFM12724	DFM12764	1/4" x 2-1/4"	6.4 x 57.2	100	500
DFM12726	DFM12766	1/4" x 2-3/4"	6.4 x 69.9	100	500
DFM12728	DFM12768	1/4" x 3-1/4"	6.4 x 82.6	100	500
-	DFM12770	1/4" x 3-3/4"	6.4 x 95.3	100	500
DFM12732	DFM12772	1/4" x 4"	6.4 x 101.6	100	500
-	DFM12774	1/4" x 5"	6.4 x 127.0	100	500
-	DFM12776	1/4" x 6"	6.4 x 152.4	100	500



HWH = Hex Washer Head (slotted); PFH = Phillips Flat Head

* Catalog numbers with a * denote sizes that meet the minimum anchor length requirement for strength design provided the fixture attachment does not exceed 0.036-inch (0.91mm) in thickness.

- One straight shank drill bit included in each standard box.
- Hex Washer Head UltraCon+ anchors are measured from below the washer. Phillips Flat Head UltraCon+ anchors are measured end to end.
- To select the proper minimum anchor length, determine the embedment depth required to obtain desired load capacity. Then add the thickness of the fixture, including any spacers or shims, to the embedment depth.

Ordering information continued overleaf

MECHANICAL ANCHORS

ULTRACON[®]+
Concrete Screw Anchor

UltraCon+ Drill Bits

Cat. No.	Description
DW5381	5/32" x 7" UltraCon+ SDS bit
DW5382	3/16" x 7" UltraCon+ SDS bit



Installation Kit

Cat. No.	Description
DW5366	UltraCon®+ Installation Kit includes: 5/32" and 3/16" UltraCon+ bit, 1/4" and 5/16" nutsetters, #2 and #3 Phillips bits, Phillips flat head adapter, percussion adapter, drive sleeve and 1/8" allen wrench



Rotary Hammers

Cat. No.	Description
DCH274	18V XR BRUSHLESS Heavy Duty 3 Mode SDS+ Rotary Hammer
DCH263	18V XR Li-Ion BRUSHLESS Heavy Duty In-Line 3 Mode SDS+ Rotary Hammer



Accessories

Cat. No.	Description
D25303DH	18V XR Cordless Rotary Hammer Dust Extraction System for DCH274
DWH050	Drilling and Hole Cleaning System
DWH201D	Dust Extractor Accordion



Dust Extractors

Cat. No.	Description
DCV586M	54V XR FLEXVOLT M Class Dust Extractor
DWV902M	38L M Class Dust Extractor Vacuum
DWH161	18V XR BRUSHLESS Universal Dust Extractor



TECHNICAL SUPPORT CONTACT INFORMATION

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Disclaimer for Recommendations, Information and Use of Data

The recommendations, information and data contained in this manual are put together with the greatest care and accuracy possible. It is based on principles, equations and safety factors set out in the technical documentation of Stanley Black & Decker that are believed to be correct and current as of April 2020. The information and data is subject to change after such date as Stanley Black & Decker reserves the right to change the designs, materials and specifications of the products in this manual without notice.

It is the responsibility of the design professional to ensure that a suitable product is selected, properly designed and used in the intended application. This includes that the selected product and its use is compliant with the applicable building codes and other legal requirements and will satisfy durability and performance criteria and margins of safety which they determine are applicable. The products must be used, handled, applied and installed strictly in accordance with all current instructions for use published by Stanley Black & Decker.

The performance data given in this manual are the result of the evaluation of tests conducted under laboratory conditions. It is the responsibility of the designer and installer in charge to consider the conditions on site and to ensure the performance data given in the manual is applicable to the actual conditions. In particular the base material and environmental conditions have to be checked prior to installation. In case of doubt, contact the technical support of Stanley Black & Decker.

Limitation of Liability

Stanley Black & Decker offers a limited product warranty to customers or end users that the product meets its applicable specifications. Except for the express warranty in the immediately preceding sentence, Stanley Black & Decker grants no other warranties, express or implied, regarding the products, their fitness for any purpose, their quality, their merchantability or otherwise. Further, Stanley Black & Decker shall have no liability with respect to changes in the design, materials and specifications in the products presented in this manual, nor with respect to any product which has been modified or installed improperly, regardless of any specific instructions to

the installer. The responsible designer and installer shall indemnify, defend, and hold harmless Stanley Black & Decker for any and all claimed loss or damage occasioned, in a whole or in part, by the modified products or deviation in product installation procedures.

Limitation of Damages

Stanley Black & Decker or its affiliates or their respective officers, members, managers, directors, representatives, agents or employees are not obligated for direct, indirect, incidental or consequential damages, losses or expenses in connection with, or by reason of, the use of, or inability to use the products for any purpose. Implied warranties of merchantability or fitness for a particular purpose are specifically excluded.

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