



AVAIL[®]

BALLISTIC DOOR PANELS

LEVEL III + M855/M193/MSR



INSTALLATION GUIDE

for front driver and
passenger-side doors

As shown on
FORD[®] EXPEDITION
(2018 & Newer Models)



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TABLE OF CONTENTS

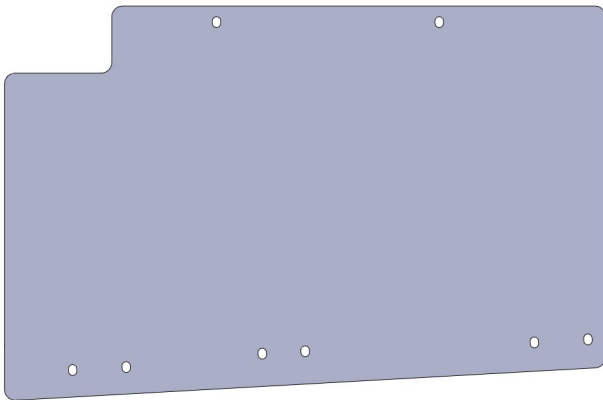
INTRODUCTION	3-4
Product Description	3
Installation Overview	3
Warnings & Cautions	4
Legal Statements	4
PARTS & TOOLS LIST.	5-7
Installation Kit Contents	5
Personal Protective Equipment	7
Required Tools	7
Recommended Tools	7
INSTALLATION	8-13
Overview	8
- General Installation Procedure	8
- Important Notes	8
Procedure	9
- Installing the Check Strap	9
- Removing the Panel Mounting Bolts	9
- Removing the Door Panel	9
- Removing the Side View Mirror	10
- Removing the Outer Window Weatherstrip	10
- Removing Internal Components	10
- Removing Window Glass and Regulator	10
- Installing the Avail Ballistic Package	11
- Installing the Avail Ballistic Panel	11
- Completing Installation	12
REMOVAL OR DECOMMISSION	13



INTRODUCTION

Congratulations on your purchase of the Angel Armor® Avail Ballistic Door Panel (Level III+) for Ford Expedition (2018 – Newer Models)! It's our honor to provide advanced protection to those who put their lives on the line in the name of law and order.

Your vehicle will soon be upfitted with the finest ballistic technology available. With optimized coverage area, a seamless design and powerful protection from NIJ Level III rifle threats, Avail elevates vehicle protection to a higher level.



▲ Figure 1. Angel Armor Avail Ballistic Door Panel (Level III+) for Ford Expedition 2018 - Newer Models)

Product Description

The Avail Level III+ armor panel is made of a premium steel plate packed with superior protective capabilities. This high-strength solution features discreet, seamless coverage in a single-piece design and a weatherproof

coating to help resist environmental wear and corrosion. The alloy steel crash bar brackets and door mounting bracket secure the armor in place to help prevent rattling and shifting within the door and a nylon check strap is included to preserve door functionality and hinder over-extension.

When fully installed, the complete Avail Level III+ ballistic armor package gives officers the ability to use their door as a tactical shield against rifle-round threats without compromising the integrity/functionality of the vehicle door.

Avail exceeds NIJ Level III Standard 0108.01 protocol for multi-round protection and offers a five-year express limited warranty.

Installation Overview

The ballistic door panel installation shown in this guide was performed on the front driver-side door of the Ford Expedition (2018 - Newer Models). The installation process is the same for front passenger-side doors of the Ford Expedition (2018 - Newer Models).

Avail Level III+ armor features a simple installation starting with applying the door hinge check strap. Door disassembly is required to install the crash bar brackets and door mounting bracket. Once this is completed, the armor is secured in place and the vehicle door panel is reassembled. Installation takes approximately 2 - 3 hours per vehicle door.



**Watch an installation in action
at angelarmor.com.**









Warnings and Cautions

Please adhere to the following guidelines to prevent personal injury, equipment damage and unnecessary difficulty during installation.



DISCONNECT THE VEHICLE BATTERY AFTER THE WINDOW IS ADJUSTED FOR REMOVAL/ INSTALLATION TO AVOID ACCIDENTAL AIRBAG DEPLOYMENT. ACCIDENTAL DEPLOYMENT OF THE AIRBAG MAY CAUSE SERIOUS PERSONAL INJURY.

-  Read this guide in its entirety before beginning installation.
-  Wear appropriate protective gear, including eye, hand and foot protection.
-  Use extreme caution when transporting the ballistic door panel. The armor panel is very heavy and impact may result in serious injury.
-  To avoid muscle strain or back injury, use lifting aids and proper lifting techniques when transporting the ballistic door panel.
-  Avoid excessive force when inserting the armor into the car door. Excessive force may damage the weatherstripping or scratch finished surfaces.
-  Avoid puncturing speakers with screws, push-snaps, fasteners or other sharp pieces during door disassembly, panel insertion and door re-assembly.



Do not drop screws or other assembly components inside the door, as they may be difficult to retrieve. If possible, use magnetic tools during installation.



Use only plastic trim removal/prying tools on finished surfaces to help prevent scratching.



Discard and replace any door components that are inadvertently damaged during the installation process. Proper installation according to the instructions in this guide should not cause damage to any vehicle or window armor parts or components.



Use caution when removing parts that may have sharp edges, such as the outer window weatherstrip.

Legal Statements

See Warranty and Terms and Conditions for important legal information on angelarmor.com. These instructions are provided for your convenience only, and Angel Armor expressly disclaims any liability for any damage to personal property or personal injury that occurs as a result of either installation or removal of panels.

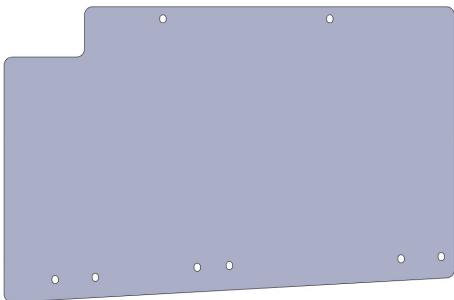


PARTS & TOOLS LIST

This section lists the parts included in the installation kit and the tools recommended for installation. Installation kit contents are for one door panel.

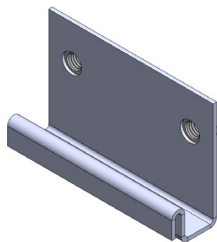
Installation Kit Contents

- One Avail Ballistic Door Panel (Level III+) for Ford Expedition (2018 - Newer Models)



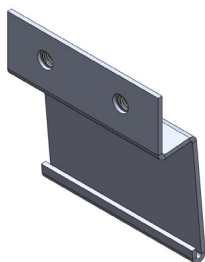
▲ Figure 2. Avail Ballistic Door Panel for Ford Expedition (driver side part shown)

- One Avail Front Crash Bar Bracket



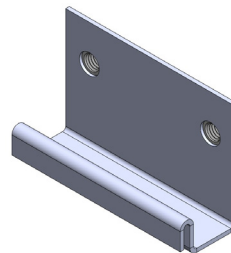
▲ Figure 3. Front Crash Bar Bracket

- One Avail Middle Crash Bar Bracket



▲ Figure 4. Middle Crash Bar Bracket

- One Avail Rear Crash Bar Bracket



▲ Figure 5. Rear Crash Bar Bracket

- One Avail Upper Bracket



▲ Figure 6. Render of Lower Door Mounting Bracket (driver side part shown)

- One Avail Check Strap



▲ Figure 7. Render of Check Strap (driver side part shown)

- Two Avail Nylon Installation Straps



▲ Figure 8. Installation Straps

- Four 20mm M8 Bolts



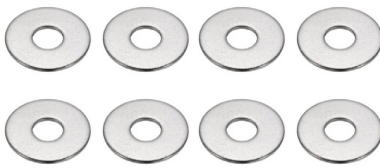
▲ Figure 9. Four 20mm M8 Bolts

■ Four 25mm M8 Bolts



▲ Figure 10. Four 20mm M8 Bolts

■ Eight M8 Washers



▲ Figure 11. Eight M8 Washers

■ Four Self-Tapping Screws



▲ Figure 12. Self-tapping Screws

■ Panel Bond Container



▲ Figure 13. Panel Bond Container

■ One Isopropyl Alcohol Wipe



▲ Figure 14. Isopropyl Alcohol Wipe

■ One Brand Label



▲ Figure 15. Angel Armor Brand Label



Personal Protective Equipment

- Protective gloves
- Protective eye wear
- Steel-toe boots

Required Tools

- Panel/trim removal tools of varying size
- Torx T20 and T15 screwdrivers
- 7, 8, 10, and 13mm sockets, and/or box end wrenches
- Socket wrench
- Pick tool
- Torque wrench
- Magnetic parts tray
- Coarse-grit sandpaper
- Panel Bond Gun (3M EPX 11 Epox Applicator H-7878 or equivalent)



▲ Figure 16. Panel Bond Gun

Recommended Tools

- Touch-up paint
- Magnetic retrieval tool
- Headlamp or flashlight



INSTALLATION

This section provides instructions for installing Angel Armor Avail Ballistic Door Panels (Level III+) into the Ford Expedition (2018 - Newer Models.)

Overview

Installation of the Angel Armor Avail Ballistic Door Panel (Level III+) into a Ford Expedition is simple. Door disassembly is required to install the check strap crash bar brackets and armor mounting brackets. Once this is completed, the armor is secured in place and the vehicle door panel is quickly reassembled. See page 9 for detailed instructions.

General Installation Procedure

- 1** Install the Check Strap.
- 2** Remove the Panel Mounting Bolts.
- 3** Remove the Door Panel.
- 4** Remove the Side View Mirror.
- 5** Remove the Outer Window Weatherstrip.
- 6** Remove the Internal Components.
- 7** Remove the Window Glass and Regulator.
- 8** Install the Avail Ballistic Package.
- 9** Install the Avail Ballistic Panel.
- 10** Reassemble the door.

Important Notes

- The directions, photographs and illustrations in this guide depict an installation performed on the driver side. The same installation procedure applies to the passenger door.
- Note the location of screws, fasteners, wires and door components before disassembling to aid proper re-assembly after panel installation.
- Place all removed hardware and components in a safe place or magnetic tray during installation.
- The Avail Level III+ armor panel is made of a premium steel plate. This protective material is heavy and extra caution should be taken when transporting, handling and installing the armor.
- Firm pressure may be needed to clear minor obstructions during insertion of the ballistic panels but never use excessive force. Excessive force may damage internal door components.

⚠ Use extreme caution when transporting the ballistic door panel. The armor panel is very heavy and impact may result in serious injury.

⚠ To avoid muscle strain or back injury, use lifting aids and proper lifting techniques when transporting the ballistic door panel.

⚠ Wear appropriate protective gear, including eye, hand and foot protection. Protective gloves are highly recommended when handling the steel armor.



PROCEDURE

Complete the following steps to properly install Angel Armor Avail Ballistic Door Panels (Level III+) for Ford Expedition (2018 - Newer Models).

Installing the Check Strap

- 1** Open the vehicle door to its fully opened position.
- 2** Locate the OEM (Original Equipment Manufacturer) check strap that connects to the front and middle of the door to the A-pillar of the vehicle cabin.
- 3** Using a 10mm socket, remove the bolt from the check strap on the cab side of the vehicle. It may help to have an extension to access the bolt head.
- 4** Insert the smaller bracket on the A-pillar under the OEM check strap mount. Use the original bolt to securely fasten the check strap to the A-pillar.
- 5** Now, remove the two nuts securing the OEM check strap assembly to the door frame.
- 6** Pre-bend the nylon webbing of the check strap so that when the door closes, the nylon bends outward. Pre-bending the strap gives the nylon material a "memory" to ensure that it does not affect the door closure.
- 7** Install the nylon check strap and bracket assembly by placing the bracket with two

mounting holes over the threaded studs that mount the OEM check strap to the door frame. Use the OEM nuts to secure the bracket in place. This requires a slight angle to place.

NOTE: The installed strap helps prevent over-extension of the vehicle door. Adjustments to the door hinge will be made after armor is installed for proper alignment due to the added weight of the armor. Nut torquing will occur after the final adjustment.

Removing the Panel Mounting Bolts

- 1** Remove the two 7mm screws at the bottom of the interior vehicle door panel.
- 2** Remove the trim cover behind the interior door handle.
- 3** Remove the two 8mm screws from behind the interior door handle.
- 4** Remove the trim cover by the mirror.
- 5** Remove the 7mm screw from behind the mirror trim.

Removing the Door Panel

- 1** Visually locate the interior door trim retainers inside the vehicle door trim panel.
- 2** Roll the interior vehicle door panel off of the interior weather strip and away from the door at the retainer locations shown below.





▲ Figure 17. Removing panel from weather strip and retainer locations

- 3** Hold the vehicle door panel at the base and lift it over the door lock pin. Then, pull the vehicle door panel away from the door.
- 4** Unhook electrical and mechanical attachments from the interior side of the door panel.
- 2** Remove the Torx T-15 screw at the rear end of the outer window weatherstrip.
- 3** Lift up the rear end of the weather strip and slide it out.
- 4** Adjust the window height to 6" inches.
- 5** Turn off the ignition switch and remove the key.

Removing the Side View Mirror

- 1** Remove wire connection to mirror.
- 2** Remove 4 nuts (10mm socket). 2 hidden by interior window trim.
- 3** Lift and rotate mirror out of position.
- 4** Set aside.

Removing the Outer Window Weatherstrip

NOTE: Use caution when removing parts that may have sharp edges, such as the outer window weatherstrip.

- 1** Lower the window glass completely into the door.

Removing Internal Components

- 1** Remove the door handle mounting bracket by removing the two 7mm screws.
- 2** Remove the internal plastic weather seal, being careful not to tear it.
- 3** Remove the four 7mm screws in the speaker.
- 4** Remove the electrical connector from the speaker and set aside.

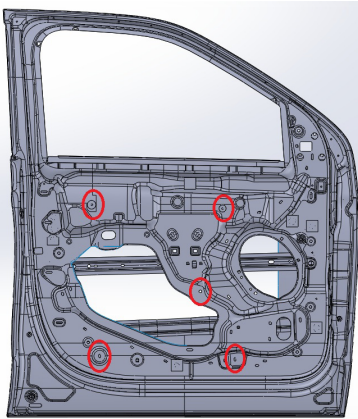
Removing Window Glass and Regulator

- 1** Reconnect the window controls and put the vehicle into accessory mode.
- 2** Run the window up until you can clearly see both window regulator clips in the viewing ports.
- 3** Using a pry tool, push the back of the regulator clips away from the window while applying pressure to lift the window glass out of the clip.
- 4** Repeat this with the other regulator clip.
- 5** Turn the window 90 degrees and lift out



of the door.

- 6 Using a 10mm socket, remove the five nuts holding the window regulator assembly.



▲ Figure 18. Regulator nut locations

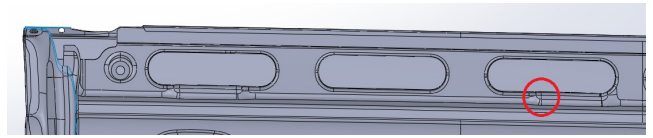
- 7 Rotate the window regulator assembly out of the viewing port and set aside.

Installing the Avail Ballistic Package

- 1 Remove all the rust, primer, and paint from the top of the door frame, underneath the pill holes of the interior, using a coarse-grit sandpaper.
- 2 Prepare the panel bond adhesive and applicator.

NOTE: The panel bond adhesive can set in the tube, clogging the applicator for future use. It is best practice to get all doors to this point, so the panel bond does not sit for more than fifteen minutes between uses..

- 3 Apply the panel bond adhesive to the back side of the top bracket.
- 4 Align the top bracket with the depression in the front pill hole of the door skin.



▲ Figure 19. Top bracket alignment edge

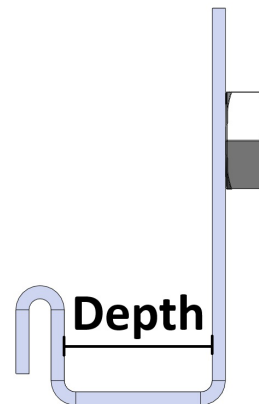
- 5 Press the top bracket flush to the portion of the door with the holes cut into it. Then, raise the bracket until the angled portion of the bracket and the door skin are flushed.

NOTE: The bracket should protrude over the holes slightly once properly aligned.

- 6 Using the self-taping screws, fasten the top bracket to the door skin.

Installing the Avail Ballistic Panel

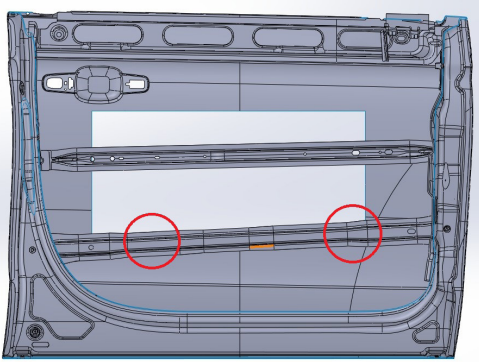
- 1 Identify the difference between the front crash bar bracket and the rear crash bar bracket by checking the depth of the bracket. The rear crash bar bracket is deeper than the front crash bar bracket.



▲ Figure 20. Bracket depth

- 2 Set aside each bracket on the crash bar by wrapping the hem joint around the top of the crash bar and letting the rest of the bracket sit between the crash bar and the exterior door skin.





▲ Figure 21. Crash bar bracket location

- 3** Using the nylon installation straps, lower the ballistic panel halfway into the door.
- 4** Using the two 25mm M8 bolts, attach the middle crash bar bracket to the front of the ballistic panel.

NOTE: Be sure to tighten these two bolts to 18 ft/lbs prior to moving on, as they will be inaccessible during the rest of the installation process.
- 5** Lower the panel into the door, ensuring that the panel stays between the crash bar and the exterior door skin, while keeping the middle crash bar bracket on the front side of the crash bar.
- 6** Hook the bracket around the bottom of the crash bar.
- 7** Using two 25mm M8 bolts, loosely attach the ballistic panel to the top bracket.
- 8** Slide the front crash bar bracket into its final position behind the ballistic panel.
- 9** Attach the bracket and panel using two 20mm M8 bolts.
- 10** Repeat this process with the rear crash bar bracket.
- 11** Confirm that the armor is in its final position by checking the following:

- A** The crash bar brackets are properly hooked around the crash bar.
- B** The door handle wiring harness connector sits freely and is not pinched by any portion of the armor.
- C** Torque all M8 bolts to 18 ft/lbs.
- D** Firmly grip the armor and shake, assuring no movement in the armor panel.
- E** Torque all check strap bolts to OEM guidelines.

Completing Installation

- 1** Put all sections of the door back together in reverse order of removal.

NOTE: Be sure to use all OEM parts during reinstall. Refer to instructions at the beginning for guidelines.
- 2** Verify that all trim and window components are properly reinstalled by ensuring that the window, door locks, and mirrors function as intended.
- 3** Once armored, the vehicle door may require additional adjustment at the hinges for proper closing and matching of body lines. Conduct final door adjustment by completing the following steps:
 - A** Loosen the door side hinge nuts.
 - B** With the help of an assistant or door lift, apply gentle upward pressure on bottom of door and move in/out at top and bottom of door as required.
 - C** Re-torque bolts, gently close the door and inspect closure/alignment.



D Repeat as necessary.

3 Attach the Angel Armor brand label toward the top of the interior door panel by completing the following procedure:

A Clean the attachment area on the door with the supplied isopropyl alcohol wipe.

B Allow the door surface to dry completely.

C Remove the backing from the brand label.

D Apply the brand label to the door, pressing for at least 30 seconds to ensure proper adhesion.



▲ Figure 22. Applying the Angel Armor brand label.

REMOVAL OR DECOMMISSION

If removing the armor for decommission or transfer to another vehicle, contact Angel Armor for support.

INSTALLATION COMPLETE:

Your vehicle is now equipped with Avail Level III+ — advanced ballistic protection from Angel Armor.

