



AVAIL[®]

**BALLISTIC
DOOR PANELS**

NIJ LEVEL IIIA



INSTALLATION GUIDE

As shown on

**FORD[®] EXPEDITION SSV
FOR FRONT DOORS**
(2018 & newer models)



angelarmor.com

970 235 2961

sales@angelarmor.com

TABLE OF CONTENTS



INTRODUCTION	3
Product Description	3
Installation Overview	3
Warnings & Cautions	4
Legal Statements	4
 TOOLS & PARTS LIST	 5
Recommended Tools	5
Installation Kit Contents	5
 INSTALLATION	 6
Overview	6
– General	6
– Important Notes	6
Procedure	7
– Removing the Panel Mounting Bolts	7
– Removing Vehicle Interior Door Trim Panel	8
– Installing Window Regulator Sled	8
– Removing Side View Mirror	9
– Removing the Outer Window Weatherstrip	9
– Inserting Ballistic Panel	9-11
– Replacing the Outer Window Weatherstrip	11
– Replacing Side View Mirror	12
– Replacing Interior Door Trim Panel	12
– Completing Installation	12
 REMOVAL OR DECOMMISSION	 13

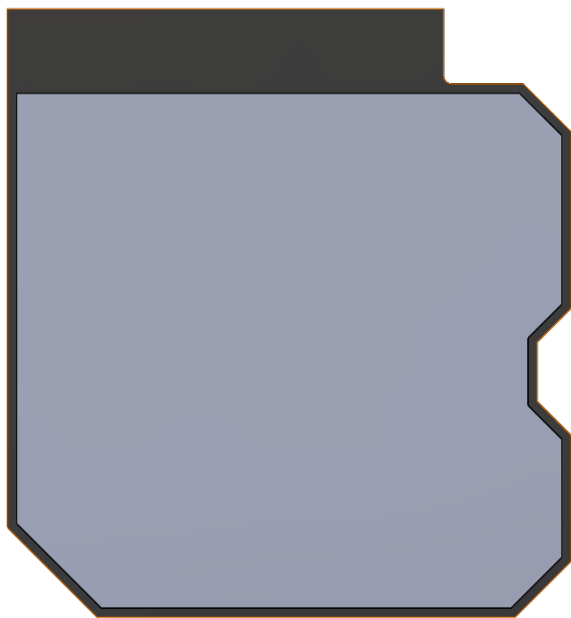
© 2024 ANGEL ARMOR, LLC. ALL RIGHTS RESERVED. PRINTED IN THE U.S.A.

FORD® IS A REGISTERED TRADEMARK OF FORD MOTOR CORPORATION.

INTRODUCTION

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

In just a matter of minutes, your vehicle will be upfitted with the finest ballistic technology available. With innovative ballistic materials, advanced designs and the fastest installation in the industry, Angel Armor Avail Ballistic Door Panels elevate protective technology to a higher level.



▲ Figure 1. Angel Armor Avail Ballistic Door Panel (Level IIIA) for the Ford Expedition SSV

Product Description

Angel Armor Avail Ballistic Door Panels (Level IIIA) are constructed of a proprietary technology that is not only remarkably strong, but also thin, lightweight and weatherproof. These properties, plus semi-rigid material characteristics, enable unprecedented ease of installation while providing protection independently tested in accordance with NIJ Standard 0108.01 protocol. Angel Armor Avail Ballistic Door Panels (Level IIIA) for the Ford Expedition SSV exceed NIJ Standard 0108.01 protocol for multi-round protection and offer a five-year express limited warranty. Within this period, the panels may be removed and transferred to another vehicle of the same make and model without violating the warranty.

Installation Overview

Angel Armor Avail Ballistic Door Panels (Level IIIA) for the Ford Expedition SSV require no additional brackets or fasteners. The Ballistic Door Panel is inserted into the door, adjacent to the window glass. Plastic door pry tools are the only tools required.

Installation into Ford Expedition SSV takes as little as 15 minutes for experienced installers. The average user installation takes only 25 to 30 minutes.



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.

Legal Statements

See supplied Warranty and Terms and Conditions for important legal information. 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.

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 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 and foot protection.



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.



Avoid tearing the weatherproof cover on the “teeth” inside of the door when removing the ballistic panel by pushing the panel toward the interior of the door before lifting it out of the door



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 Ballistic Door Panel parts or components.



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

TOOLS & PARTS LIST

This section lists the tools recommended for installation and the parts included in the installation kit.

Recommended Tools

This section lists tools to be supplied by the installer.

- Panel/trim removal tools of varying sizes
- Torx T20 screwdriver
- Pick tool
- 7 mm socket
- 8 mm socket
- 10 mm socket
- File tool



▲ Figure 2. Panel/trim removal tool



▲ Figure 3. Torx T20 screwdriver



▲ Figure 4. Pick tool



▲ Figure 5. 7 mm socket



▲ Figure 6. 8 mm socket



▲ Figure 7. 10 mm socket

Installation Kit Contents

This section lists the Ballistic Door Panel type and all parts included with it.

- Angel Armor Avail Ballistic Door Panel (Level IIIA) for Ford Expedition SSV (2018 & newer models)



▲ Figure 8. Angel Armor Ballistic Door Panel (Level IIIA) for the Ford Expedition SSV

- Regulator sled (part 24453)



▲ Figure 9. Regulator sled

- Angel Armor brand label



▲ Figure 10. Angel Armor brand label

- Isopropyl alcohol wipe



▲ Figure 11. Isopropyl alcohol wipe

INSTALLATION

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

Overview

Installation of Angel Armor Avail Ballistic Door Panels (Level IIIA) into the Ford Expedition SSV is accomplished quickly and easily. See Procedure on page 7 for detailed instructions.

General Installation Procedure

- 1** Detach vehicle interior door trim panel.
- 2** Modify window regulator.
- 3** Insert and secure Angel Armor Ballistic Door Panel.
- 4** Re-assemble door.

Important Notes

- The directions, photographs and illustrations in this guide depict an installation performed on the driver's side. The same installation procedure applies to the passenger door. NOTE: The anti-abrasion panel faces the interior of the vehicle for both the driver-side and passenger-side Ballistic Door Panels.
- Note the location of screws and door components before disassembling to aid proper re-assembly after panel installation.
- Place all removed hardware and components in a safe place during installation.
- Angel Armor Avail Ballistic Door Panels are semi-rigid, which allows them to be bent slightly for easy installation. To help prevent damage to the Ballistic Door Panels, do not bend them tighter than a 6" radius (12" diameter).
- 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.
- Bypass obstructions inside the door, such as crash bars or window attachment brackets, by angling the panel during insertion or by removing and re-inserting the ballistic panel, as described in Inserting the Ballistic Door Panel, on page 9-11.

PROCEDURE

Complete the following steps to properly install Angel Armor Avail Ballistic Door Panels (Level IIIA) for Ford Expedition SSV.

Removing the Panel Mounting Bolts

- 1 Remove the two 7 mm screws at the bottom of the interior vehicle door panel.



▲ Figure 12. Remove 7 mm panel mounting bolt

- 2 Remove trim cover behind the interior door handle.



▲ Figure 13. Trim cover and bolt locations

- 3 Remove the two 8 mm screws from behind the interior door handle.



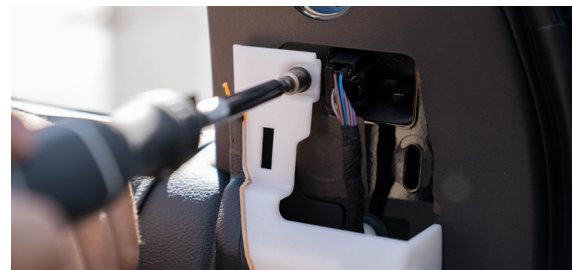
▲ Figure 14. Removing 8 mm panel mounting bolts

- 4 Remove the trim cover by the mirror.



▲ Figure 15. Removing the trim cover

- 5 Remove the 7 mm screw from behind the mirror trim.



▲ Figure 16. removing the 7 mm mounting bolt

Removing the Vehicle Interior Door Trim Panel

- 1** Visually locate the interior door trim retainers inside the vehicle door trim panel.
- 2** Roll the interior vehicle door panel off interior weather strip away from the door at the retainer locations seen in Figure 12.



▲ Figure 17. Prying open the vehicle interior door trim panel

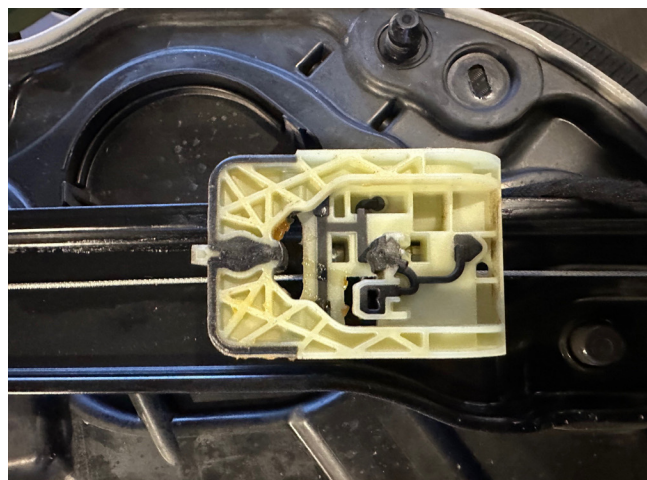
- 3** Hold the vehicle door panel at the base and lift it over the door lock pin. Then, pull the vehicle door panel away from the door.
- 4** Disconnect wiring harnesses from door panel.
- 5** Disconnect handle cable and lock pop up from door panel.
- 6** Set door panel aside, keep near to hook up window regulator for window manipulation.



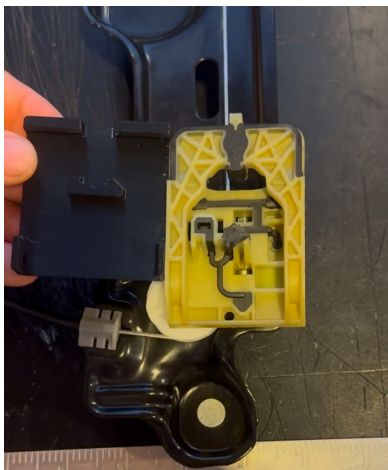
▲ Figure 18. Removing vapor barrier

Installing Window Regulator Sled

- 1** Adjust the window up for access to the window clips..
- 2** Install the provided regulator sled:
 - A** Attach the top portion of the sled to the window clip. The window clip will cover the tooth.
 - B** With the top in place, rotate the sled onto the clip until it is fully clipped.
- 3** Install the second regulator sled using step 2.



▲ Figure 19. Inside view of window regulator clip



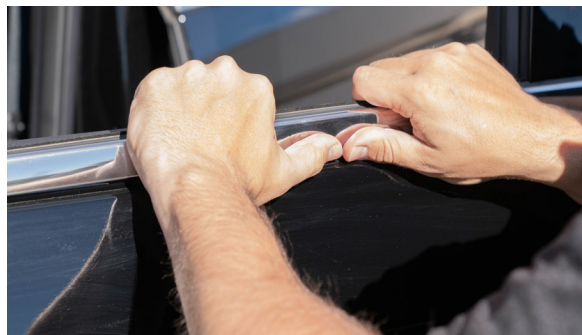
▲ Figure 20. Sled attached to window clip

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 Outer Window Weatherstrip

- 1** Lower the window glass completely.
- 2** Remove the torx screw at the rear end of the outer window weather strip.
- 3** Lift up the rear end of the weatherstrip. and work your way to the front of the vehicle door.



▲ Figure 21. Removing the window trim

- 4** Adjust window height to 6".
- 5** Turn off the ignition switch and remove the key.

Inserting the Ballistic Door Panel

- 1** Bend the bottom of the ballistic panel away from you, pressing with your knee or hand. This creates a slight curve in the ballistic panel that matches the shape of the bottom of the vehicle door and eases installation.

NOTE: Do not bend the ballistic door panel tighter than a 6" radius (12" diameter).



▲ Figure 22. Bending the ballistic panel

- 2 Hold the ballistic door panel so its antiabrasion panels face the interior of the vehicle.



▲ Figure 23. Anti-abrasion panels facing the interior of the vehicle

- 3 Leading with the bottom edge of the ballistic door panel, and lining up back edge of ballistic panel with back edge of window frame, begin to insert the panel into the door, adjacent to the outer surface of the window glass.

NOTE: Hold the leading edge of the ballistic door panel against the window glass as you insert to avoid obstructions inside the door. This can be achieved by lightly leaning back/pulling the panel out toward the exterior of the door.



▲ Figure 24. Inserting panel into door

- 4 Reach into the door panel and lead the bottom of the panel by the lower crash bar and window regulator.



▲ Figure 25. Leading the bottom of the panel

- 5 Slide the ballistic panel down into the door, following the edge of the window frame.
- 6 Temporarily re-connect the window control panel and vehicle battery.
- 7 Lower the window glass completely into the door.
- 8 Disconnect the window control panel.
- 9 **⚠️ Disconnect the vehicle battery to avoid accidental airbag deployment.**
- 10 Grip the nylon folds at the top of the ballistic panel when the ballistic panel is inserted the majority of the way down into the door.



▲ Figure 26. Leaning back/pulling ballistic door panel toward exterior of the door.

should align with and folds over the top edge of the window frame.



▲ Figure 27. Verifying the panel is no more than 2 inches from the front

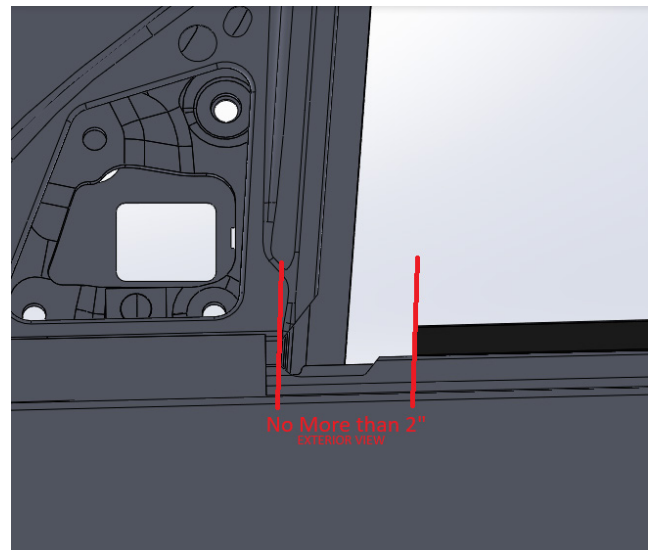
NOTES:

- Work the ballistic panel forward firmly to clear any obstructions, but never use excessive force, which may damage internal door components or puncture the ballistic door panel's weatherproof covering. It may be useful to shimmy the ballistic panel side to side while pushing forward to move it into position.
- If the ballistic panel does not clear the airbag sensor, move to the inside of the door to guide the panel forward of the sensor.
- If the ballistic panel will not seat fully forward, shift the panel backward and move the door wiring harness to manually position.



Be sure to read step 12 in its entirety, as fully understanding the procedure of this step is vital to the installation.

- 12** Verify that the ballistic panel is properly positioned, ensuring the panel is no more than 2 inches from the front of the window frame as measured in figures 27 and 28. The crease in the nylon fold at the top of the ballistic door panel



▲ Figure 28. CAD representation of no more than 2 inch measurement

NOTE: If the ballistic door panel is not properly positioned, repeat steps 1 through 11 of this section.

Replacing the Outer Window Weatherstrip

- 1 Place the front end of the weatherstrip in position under the mirror. Press the remaining length down, working front to back, and aligning the screw holes on the weatherstrip and the door.
- 2 Replace the Torx screw at the rear end of the weatherstrip.
- 3 Verify that no nylon is exposed below or



▲ Figure 29. Exterior view of properly installed ballistic panel

Replacing Side View Mirror

- 1 Place mirror in position.
- 2 Reinstall 4 nuts securing mirror.
- 3 Connect Wires.

Replacing the Interior Door Trim Panel

- 1 Replace the moisture barrier by pressing the seal.
- 2 Hook up wire harnesses/cables.

- 3 Align the interior door trim retainers with the appropriate holes in the door.
- 4 Push firmly on each retainer area until the retainers re-engage.
- 5 Replace the two 8 mm panel mounting bolt behind the door handle.
- 6 Replace the door handle trim cover.
- 7 Replace the 7 mm screws near door mirror.
- 8 Replace the two 7 mm panel mounting screws at the base of the door.

Completing Installation

- 1 Re-connect the the vehicle battery.
- 2 Attach the Angel Armor brand label to the interior door panel by completing the following procedure:
 - A Clean the attachment location on the door with isopropyl alcohol.
 - B Allow the door surface to dry completely.
 - C Remove backing from the brand label.
 - D Apply the brand label to the door, pressing for at least 30 seconds to ensure proper adhesion.



▲ Figure 30. Attach Angel Armor brand label

INSTALLATION COMPLETE:

Your vehicle is now equipped with advanced ballistic protection from Angel Armor.

REMOVAL OR DECOMMISSION

This section describes the process for removing the Ballistic Door Panel for decommission or transfer to another vehicle.

- 1 Lower the window glass completely.
- 2 **⚠️ Disconnect the vehicle battery to avoid accidental airbag deployment.**
- 3 Follow the steps in reverse order described in:

Removing panel mounting bolts (pg. 7)

Removing interior door trim panel (pg. 8)

Removing side-view mirror (pg. 9)

Removing outer window weather strip (pg. 9)

- 4 Grip the nylon folds at the top edge of the Ballistic Door Panel.
- 5 Slide the Ballistic Door Panel toward the back of the vehicle, and then up to remove it from the door. Be sure to align the Ballistic Door Panel with the vertical window frame for easier removal.
⚠️ Avoid tearing the Ballistic Door Panel's weatherproof cover on the 'teeth' inside of door by pushing the panel toward the interior of the vehicle before lifting it out of the door.
- 6 Follow the procedure described in *Replacing the Outer Window Weatherstrip* on page 11.
- 7 If removing the Ballistic Door Panel for transfer to another vehicle, inspect the panel after removal. Contact Angel Armor with any concerns about wear or damage.