MAINTENANCE INFORMATION

MI15-18

DATE :	MAY 2015	SECTION : 18 - Body
SUBJECT :	**STRUCTURE INSPECTION FOR CORROSION - HOW TO PREVENT CORROSION**	

IMPORTANT NOTICE
This maintenance is recommended by Prevost to increase your vehicle's performance. Note that no reimbursement will be awarded for carrying out this maintenance.

APPLICATION

Model	VIN 
All Prevost models	

DESCRIPTION

This procedure was made in order to support Prevost customers who are worried about their vehicle structure behavior due to corrosion.

Five year old vehicles and older should be subjected to a thorough structural inspection; especially if clear signs of moderate or deep corrosion are visible. The inspection can be conducted as described in the following procedure.

In this procedure, you will find information about:

1) The important areas that should be inspected

2) When a structural inspection should be carried out

3) How to perform the inspection

4) What can be done to optimize corrosion protection during your vehicle's life

STRUCTURE INSPECTION – CORROSION	
DESCRIPTION	**INTERVAL**
Perform structural inspection for corrosion as described in this document	**Normal duty cycle vehicles and normal environment operation** Every 5 years starting from the 5th year in service
	Severe duty cycle vehicles and harsh environment operation Every 2 years starting from the 5th year in service
	Whenever a *visual inspection* discloses that corrosion seems to have caused damages to the structure such as perforation, flaking, separation of metal layers, loss of material, etc.

CAUTION

Reject member, chassis component, axle, etc. if:

Cracked, broken, separated by corrosion or corroded to a depth as to weaken member so as to affect the safety and structural integrity of the vehicle.

DANGER

Park vehicle safely, apply parking brake, stop engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button. On Commuter type vehicles, set the battery master switch (master cut-out) to the OFF position.

THE IMPORTANT AREAS THAT SHOULD BE INSPECTED

Front & rear sub-frames, drive axle cradle and tag axle (FIGURE 1) on Prevost structures are made of high strength steel. Although the structure on a Prevost vehicle receives a beneficial corrosion preventive compound application at the end of the manufacturing process, after many years of service with exposure to harsh environments (winter, frequent rains, road salt, stone projection, sand accumulation, etc.), the carbon steel can be subject to severe corrosion. The use of high strength steel remains a requirement to withstand peak loads.

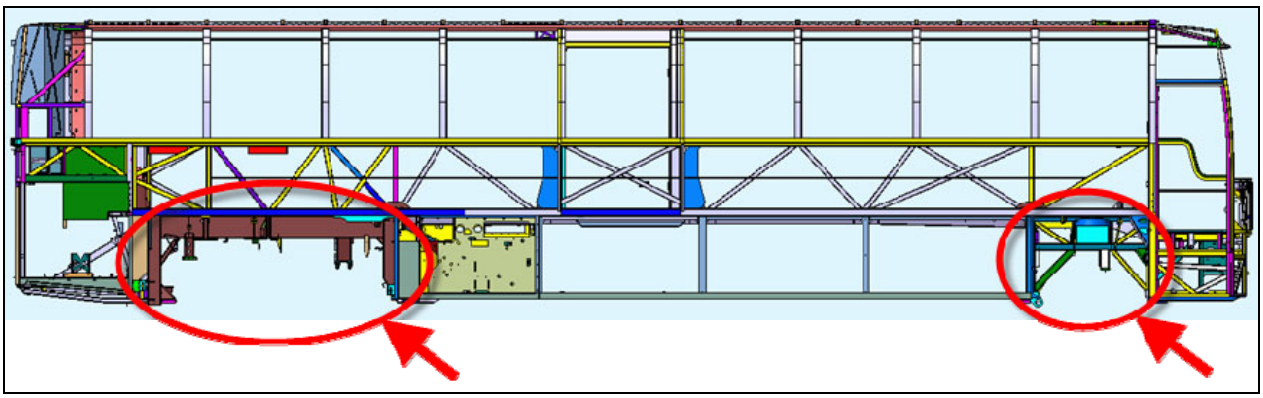

FIGURE 1 – CRITICAL AREAS: FRONT SUB-FRAME, REAR SUB-FRAME, DRIVE AXLE CRADLE AND TAG AXLE

WHEN SHOULD A STRUCTURE INSPECTION BE CARRIED OUT?

Vehicles operating in harsh environments without an appropriate corrosion protection compound applied to the front and rear sub-frames, drive axle cradle and tag axle could be subject to corrosion. If parts of the tag axle or front and rear sub-frames structures present metal flaking, separation of metal layers, loss of material, perforation, etc. then they should be inspected in order to confirm that the minimum wall thickness remains (FIGURE 2 to FIGURE 5).

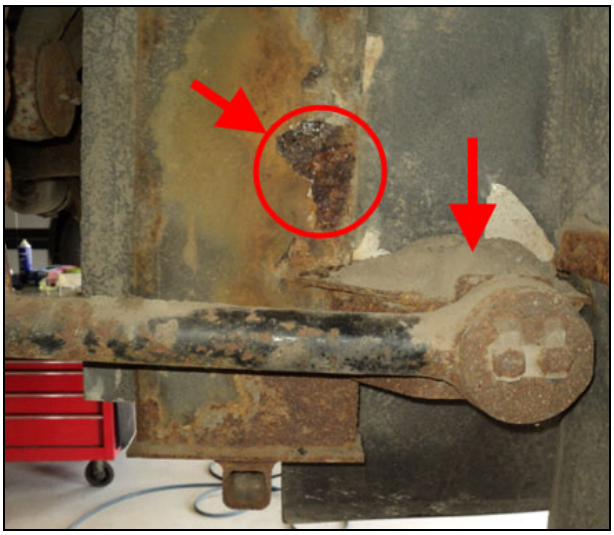

FIGURE 2: METAL FLAKING. ACCUMULATED SAND AS SHOWN ON THE IMAGE SHOULD NOT BE LEFT IN PLACE

FIGURE 3: METAL FLAKING AND ACCUMULATED SAND

FIGURE 4: METAL FLAKING ON TAG AXLE - ACCUMULATED MATTER WILL RETAIN WATER THUS CREATING CONDITIONS PROMOTING ADDITIONAL CORROSION

FIGURE 5: HEAVILY CORRODED COACH WITH BROKEN TAG AXLE. THIS IMAGE SHOWS THE SPINDLE MOUNTING PLATE SEPARATED FROM THE REST OF THE TAG AXLE

STRUCTURE INSPECTION PROCEDURE

The thickness of main carbon steel parts on rear & front sub-frames, drive axle cradle and tag axle beam must be **at least 1/8 inch (0.125") (3mm)**. There are two options to properly monitor the wall thicknesses:

1- Using an ultrasonic wall thickness gauge.

2- Drilling holes and measuring wall thickness.

1- Structural Inspection Procedure Using Ultrasonic Wall Thickness Gauge

The ultrasonic wall thickness gauge has to be used on bare metal. The surface where the gauge will be put on has to be cleaned of rust, paint or other material. If the thickness is more than 1/8 inch (3mm), repaint the cleaned surface to prevent corrosion from occurring on this spot.

Use a grinder or another tool to remove rust or paint on the spot to check. The gauge has to be placed on the center of the cleaned spot. The gauge has to be perpendicular to the surface to get an accurate measure.

Inspection using ultrasonic wall thickness gauge is recommended over drilling holes because it minimize risk of altering the vehicle structure.

FIGURE 6: CLEANED SPOT ON STRUCTURAL MEMBER

2- Structural Inspection Procedure Using Drilled Holes

Drill a ¼ inch (6 mm) diameter hole in the most corroded wall of the part being checked. Use a caliper to measure the thickness of the drilled metal. Wall thickness should be at least 1/8 inch (0.125") (3mm). Drilled hole must then be welded (filled with metal) and repainted after measurement to prevent water infiltration and corrosion from occurring around the hole.

Clean/remove flaking rust on frame. Drill hole in the most corroded wall. The hole must be welded after to prevent corrosion and water infiltration. Filled hole must be painted to prevent corrosion.

CAUTION

Holes and welding can increase the risk of crack initiation. **Ultrasonic wall thickness gauge method is recommended.**

FIGURE 7: HOLE DRILLED IN STRUCTURAL MEMBER

CORROSION PROTECTION ON OLD AND CORRODED FRAME

To maximize corrosion resistance on older frame exposed to harsh environment:

1) Clean rust on frame. If available, use sand blasting.

2) Apply a zinc-rich primer on cleaned surfaces.

3) Cover carbon steel parts with corrosion preventive compound Tectyl 185GW.

CAUTION

Avoid primer, paint, and corrosion preventive compounds on pneumatic valves and rubber bushings.

FIGURE 8: CLEAN RUST

PROTECTION TO PREVENT CORROSION

Tectyl 185GW should be used to prevent corrosion propagation on frame.

1) Clean rust and dirt on the frame.
2) Apply Tectyl following the manufacturer's recommendation.
3) Apply Tectyl every year or as needed.

CAUTION

Avoid primer, paint, and corrosion preventive compounds on pneumatic valves and rubber bushings.

For more details on Tectyl 185GW, see QC Lubricants web site:

http://www.qclubricants.com/TECTYL185GWBlack.htm

FIGURE 9: TECTYL 185GW BLACK APPLICATION

Tectyl 185GW Black

QC Lubricants carries Tectyl 185GW Black in pails and drums.

TECTYL® 185GW Black is a solvent cutback, thixotropic corrosion preventive compound. The dry film is semi-firm and has a semi-gloss appearance. TECTYL® 185GW Black provides outstanding protection in marine, tropical, and industrial environments, and is widely used for transportation equipment. TECTYL® 185GW Black possesses dielectric strength of 800 volts per dry mil of coating. TECTYL® 185GW Black provides galvanic corrosion protection and can be applied on battery terminals for insulating purposes.

PARTS / WASTE DISPOSAL

Discard according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

Access all our Service Bulletins on https://secureus5.volvo.com/technicalpublications/en/pub.asp
Or scan the QR-Code with your smart phone.

*E-mail us at **technicalpublications_prev@volvo.com** and type "ADD" in the subject to receive our warranty bulletins by e-mail.*