

WMATA: Floor Board Replacement



Prepared by: Kalman Takacs
Sr. Field Service Engineer

Approved by: Dan Allen
Chief Engineer of Mfg. and Service Support

Property name and Top bus number: WMATA 221000



Issue: Floor board issues were reported by the customer.

Solution: Replace floor boards per this work instruction.

WMATA: Floor Board Replacement



Effected buses: 22

Estimate repair hours/bus: up to 32 hours/bus depending on the number and size of the repaired area

Necessary parts:

Sikaflex 221, White, sealer,
 Sika Cleaner, 226, can,
 Sika tape, 95, 1/8"x1"x30',
 Screw, 10-24x1-1/4, FH, SS, F410,
 Washer, countersunk, SS,
 Filler, 3M Reinforced, 05877,
 Cord, welding CR50, dark blue,
 Cord, welding CA572, dark blue,
 Industrial primer,
 Rubberized undercoating:
 Adhesive, for floor rubber, 3M, 4491,
 See some pictures below about the possible usable products.

Part #: **416.00.7311.909**,
 Part #: **700-8607-003**,
 Part #: **531-7120-013**,
 Part #: **270231**,
 Part #: **700-8603-007**,
 Part #: **700-8607-031**,
 Part #: **620-1762-001**,
 Part #: **620-1762-002**,
 Part #: **NPN**,
 Part #: **NPN**,
 Part #: **700-8607-026**,

1 tube / 5 buses,
 1 can / 5 buses,
 1 roll / 22 buses,
 as required,
 as required,
 1 / 22 buses,
 as required,
 as required,
 as required,
 as required,



Example

Example

Necessary tools:

Usual hand tools (wrenches, screwdrivers, hammer, chisel, etc.) putty knife, utility knife, Sika applicator gun, angle grinder, 1/8" diameter drill bits, drill, wire wheel, 36G and 60G abrasive discs, Scotch-brite wheel, de-burr bits



Tool for welding the floor cover

Work instruction number: L3/FSV-261
 L4/QUA-003

Revision: Initial

Date: 04/23/2014
 Revision: Initial

WMATA: Floor Board Replacement



SAFETY PRECAUTIONS MUST BE FOLLOWED ACCORDING TO ACCEPTED INDUSTRY STANDARDS AND LOCAL/PROPERTY REQUIREMENTS.

1. Park the bus above a service pit or on a suitable bus lift. Do not lift the bus yet. Work inside the bus first and lift later (see item 19).
2. If bus parked above a service pit or on a scissors type lift then apply parking brake and also place wheel chocks underneath the C-axle wheels. Do not lift the bus yet. Work inside the bus first and lift later (see item 19).
3. Turn off the battery disconnect switches.



4. Locate the area where the floor wood needs to be replaced.
5. Remove trim pieces, seats, etc. as required.



WMATA: Floor Board Replacement



6. Peel the floor cover up. Use utility knife, putty knife as required. Use brake cleaner to loose adhesive if necessary.



Work instruction number: L3/FSV-261
L4/QUA-003

Revision: Initial

Date: 04/23/2014
Revision: Initial

WMATA: Floor Board Replacement



7. Remove body filler from top of mounting screws then remove screws.



8. Cut and remove damaged wood panels. Ensure not to cut deeper than $\frac{3}{4}$ ".



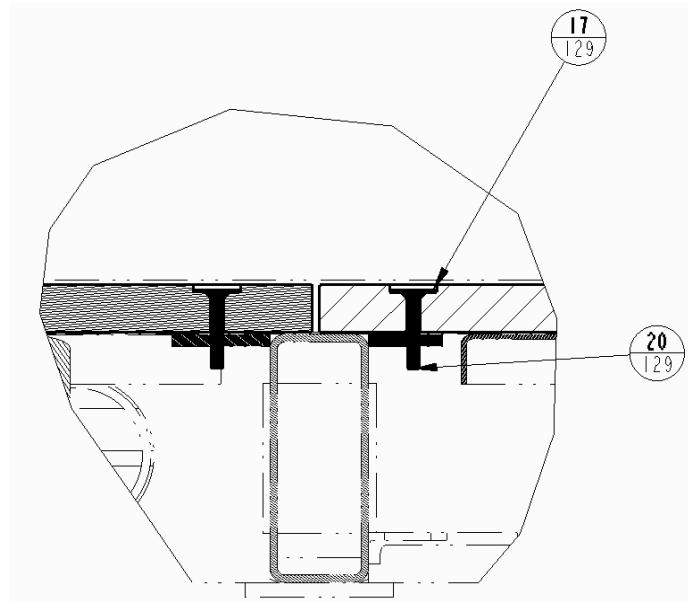
9. Inspect chassis structural tubes and identify areas (if any) that needs to be repaired. If corrosion was found follow the steps written below:

- Remove corrosion from the effected area. Use electric grinder first then the 36G abrasive wheel and finally the 60G abrasive wheel. Use different size and shape of wire wheels as required. Ensure that all corrosion is removed.
- Degrease surface with acetone.
- Apply industrial grade primer to the degreased area. Follow instructions written on the can.

WMATA: Floor Board Replacement



10. Measure and cut the required size of new wood panel pieces. Use $\frac{3}{4}$ " thick marine grade, treated wood panels with hardwood face and back and high marine grade resin content. Ensure that all of the joints/edges are above a structural tube (all joints and edges should be supported by structural tubes).
11. Drill and countersink mounting holes to the wood panels. Ensure that the location of the mounting holes are above the angle pieces and not the square structural tubes (see below).



12. Wipe structure with Sika 226 cleaner.
13. Cut Sika tape into 1" strips and place them on all supporting structure. Evenly space apart them approximately to 10" where the floor boards will be placed.
14. Apply Sikaflex 221 sealer/adhesive to the top of the structural tubes.
15. Install wood panels and secure them with self-tapping 10-24x1-1/4 screws and countersunk washers (item 17 and 20 on the drawing above).

WMATA: Floor Board Replacement



16. Apply 3M body filler (P/N 700-8607-031) to fill in counter-bores and to level all joints. Let the 3M filler dry. Follow instructions written on the can.



17. Sand wood surfaces where body filler was applied. Ensure that the surface is smooth.
18. Clean wood surfaces.
19. Lift the bus up. ***Follow safety precautions when lifting the bus. Only trained personnel can operate bus lift. Use jack stands underneath the official jacking pads.***
20. Apply Sika sealer all around the new wood panels and the bus structure.
21. Apply rubberized undercoating to the bottom of new wood panels. Follow instructions written on the can.
22. Remove jack stands and lower the bus.

WMATA: Floor Board Replacement



Floor Cover Installation

23. If the original floor cover is still in good reusable condition then remove any contamination (old glue, filler and wood pieces) from the back of the floor cover by using Scotch-brite wheel. Use new floor cover if required. See NABI Parts Catalog for floor cover P/N.
24. Degrease the entire surface of the floor cover.
25. Remove debris and dust then degrease the entire wood surface.
26. Apply adhesive onto the wood floor. Follow instruction written on the can. **Note:** NABI uses 3M 4491 adhesive at the factory. Other type of adhesives may be used if the adhesive was tested or successfully used before by the transit agency (see one example on the picture below).



27. Wait according to the instruction written on the can.
28. Install/roll the floor cover back to the wood. Use rollers to smooth the floor cover down and squeeze the air out from underneath it.
29. Let the adhesive cure per the instruction written on the can.
30. Weld the edges of the floor cover.



WMATA: Floor Board Replacement



Final operation

31. Reinstall removed parts (trim pieces, seats, etc.). Follow recommendation of NABI Maintenance Manual during installation.
32. Turn battery disconnect switches on.
33. Start the bus (WMATA technician) and ensure that no warning lights (check engine, check transmission, etc.) are on.
34. Present the repaired bus for inspection to a delegated person.
35. Record bus number, mileage, date of completing and the name of the technician who completed the repair.