



TO: Service Locations

FROM: Service Systems Development

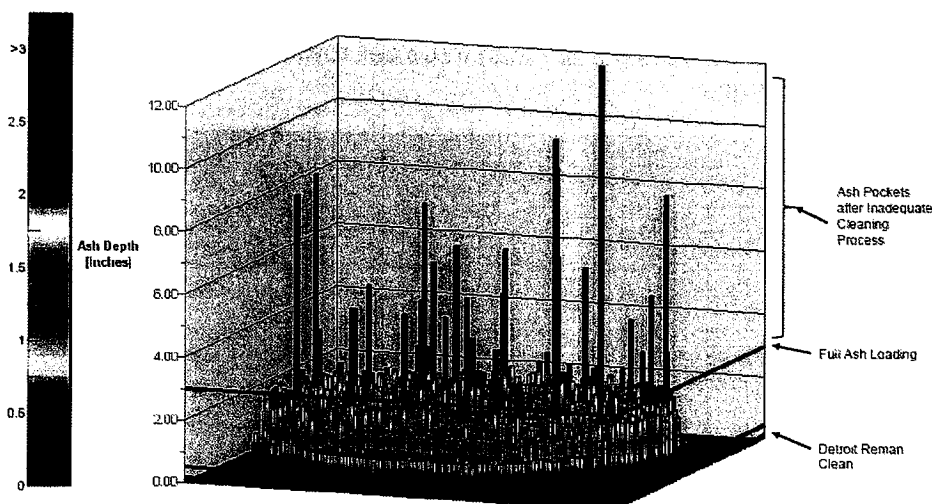
SUBJECT: **Guidelines for EPA10 and GHG14 Aftertreatment Cores**

Issue

EPA10 and GHG14 Diesel Particulate Filters (DPF) for 1-Box™ emissions package and Two-Box option aftertreatment applications and all 1-Box DOC/SCR modules assemblies are eligible for full core credits, except units that have physical damage as described in this document. In the event damage is present, cores will be eligible for a single partial credit amount that is established by Detroit™ and may be evaluated and revised periodically. Many of the issues shown are due to improper service and are considered unusable.

Air Cleaning Diesel Particulate Filters: Detroit does not endorse ash measuring and air cleaning on EPA10 and GHG14 Diesel Particulate Filter (DPF). Data has shown that air cleaning the filter does not consistently achieve a uniform removal of ash across the filter. Ash left behind from air cleaning results in hot spots within the substrate, leading to cracks, which allow unfiltered exhaust to pass through the DPF. Detroit's ReMan offers new lower priced cleaned DPFs starting May 7, 2014 for service. The graphic below illustrates the ash content of an air-cleaned filter.

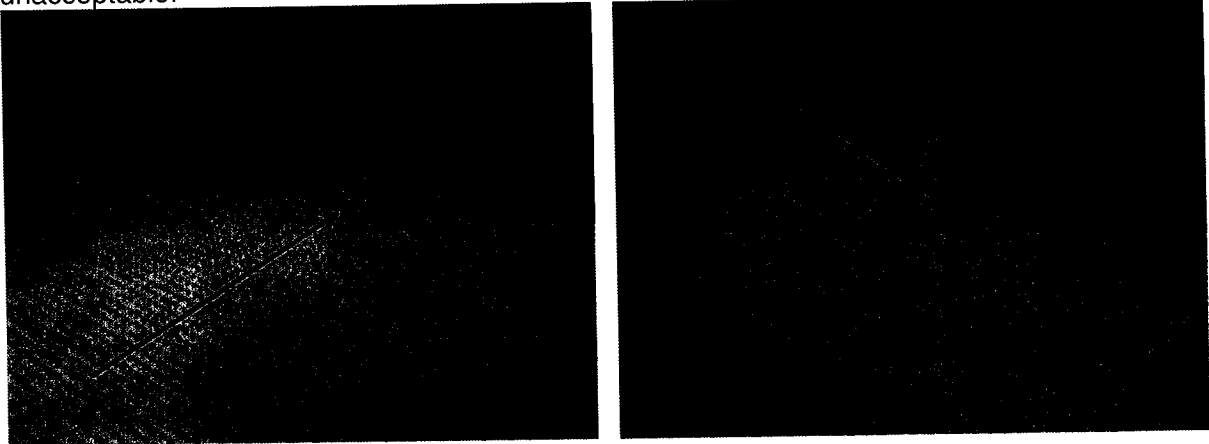
3D View of Ash Content After Inadequate Cleaning



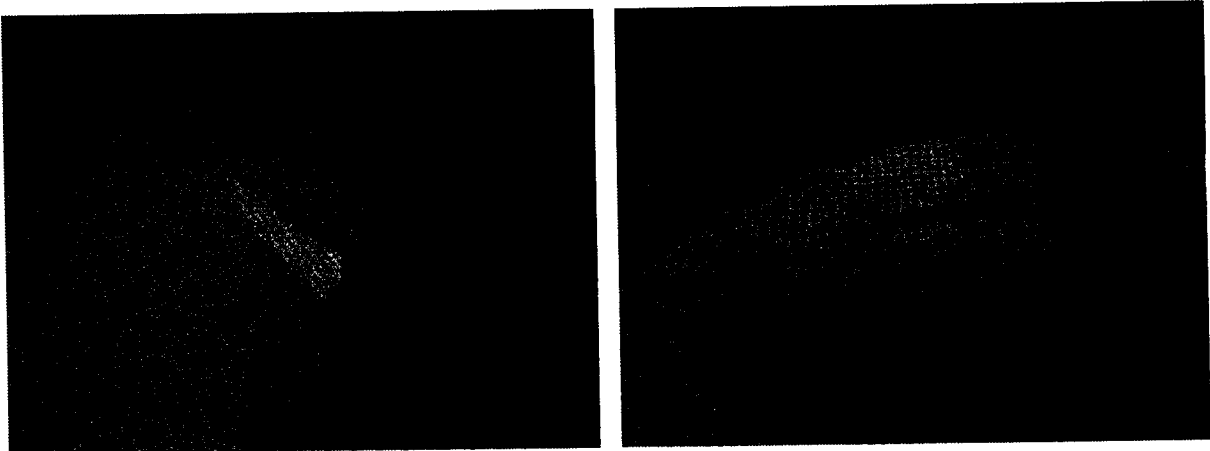
Excessive ash accumulation in the DPF from improper cleaning will also lead to over temp of the filter. Once the filter exceeds 790°C, platinum in the filter vaporizes and passes to the SCR. The SCR Catalyst is then poisoned, resulting in a “Low NOx Conversion Efficiency” fault and replacement of the SCR Catalyst.

CORE ACCEPTANCE GUIDELINES

Vertical Cracking: Cracks that run laterally through the substrate and can be seen on one or both sides of the surface. Cracks running symmetrically along the structure or in a webbed pattern, indicate extensive cell damage in the interior of the substrate and are considered unacceptable.



Substrate Surface Damage: The DPFs shown below have experienced substrate surface damage caused by gouges. Any damage to the surface of the substrate that is greater than .125” (3.18 mm) below the substrate surface, .500” (12.7 mm) in length and .251” (6.38 mm) in width will affect integrity of the substrate. See the lower left picture for an example of an unacceptable gouge. Use the illustration below to clarify maximum gouge specification. If the edge chips (lower right picture) extend to a depth that exceeds .125 in. (3.18 mm) and extends from the outer edge toward the center (being more than three cell rows), the DPF core is subject to unacceptable core charges.



Note: Photo shown may be from EPA07, EPA10 or GHG14 components. The substrate failure mode shown is consistent with all model years regardless of the exterior Can. The straps and bands used on the DPF are different depending on the application.

Specification Limit:**Radial (A)**

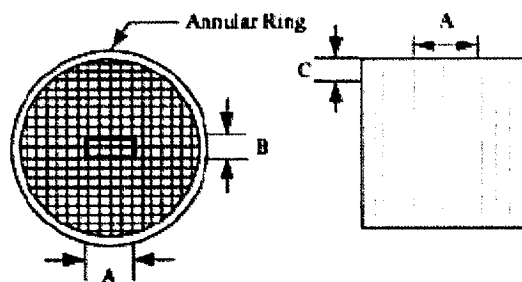
Less than or equal to .500" (12.7 mm)

Circum (B)

Less than or equal to .251" (6.38mm)

Axial (C)

Less than or equal to .125" (3.18 mm)



- Maximum gouge per face not to exceed 5
- Minimum separation between gouges is 1.960" (29.78mm)
- Cumulative gouge are not to exceed 0.5% of substrate face

Substrate Slippage: Substrate which moves inside the stainless steel can is known as slippage, caused by unusually high back pressure. Substrates flush or protruding past the can flange that come into contact with or within 1/2" (12.7 mm) of sensor or sensor bung are considered unacceptable.

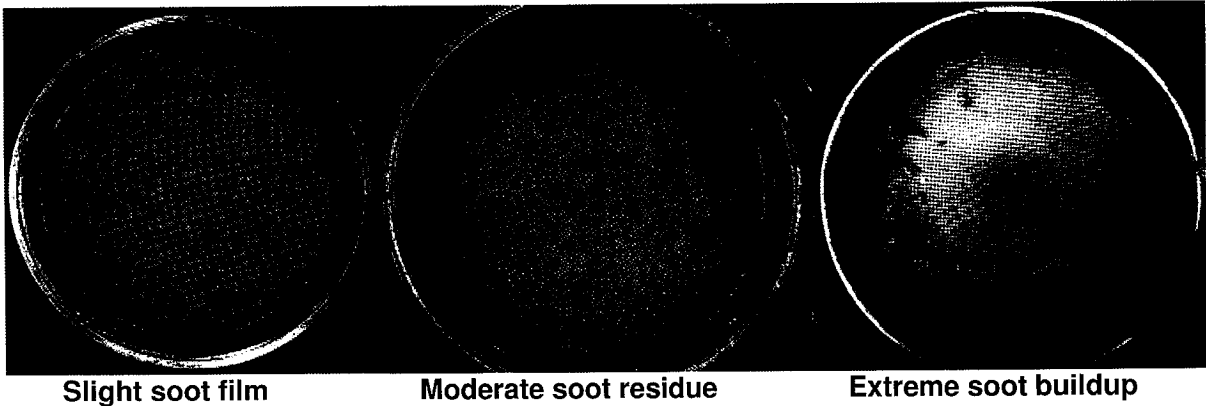


Foreign Matter: If the DPF cells are restricted (any foreign matter) on the surface of the substrate, covering an area the size of more than one square inch, then this is considered unacceptable.

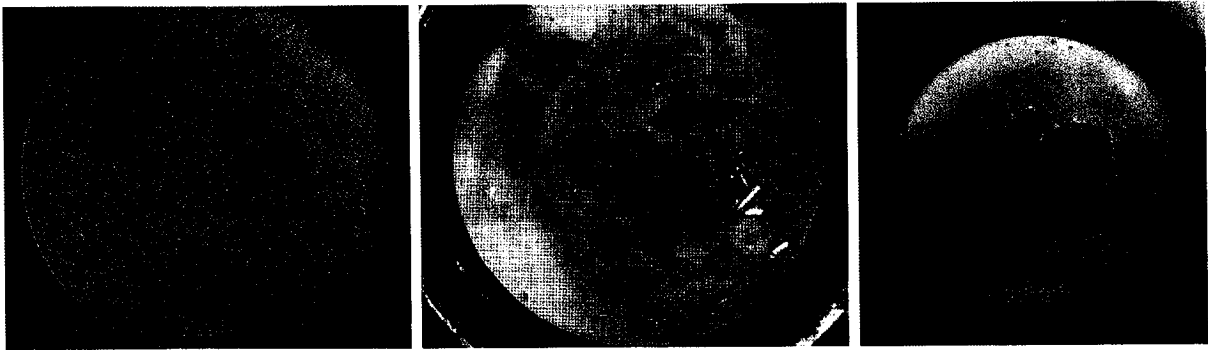


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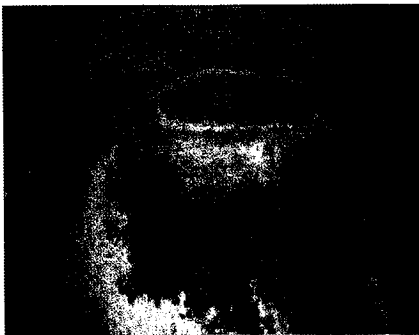
Horizontal Cracks: If the DPF substrate face has any soot residue around the circumference of the substrate, that could be an indication of internal cracks. Internal horizontal cracks allow soot and ash to pass through the substrate. Soot evidence, identified with a wipe of a light colored cloth, can be a slight amount of black film around the edges of the exhaust side to moderate and extreme cases where soot buildup occurs. All circumstances are considered unacceptable core.



Fusion or Melting: If the substrate has experienced a burn through, where the face of the substrate may be partially melted or exhibits black splotches of soot, the cell structure has been converted to molten ceramic due to an uncontrolled thermal event and is considered an unacceptable core.

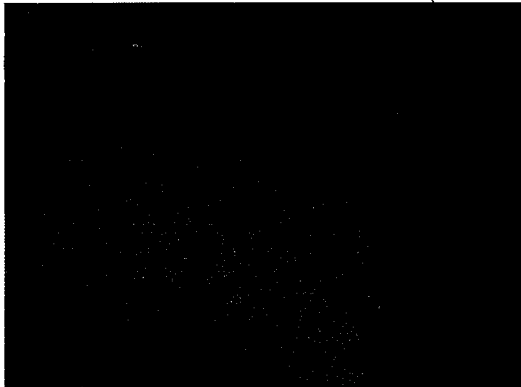


Substrate Canning Damage: Witness marks from band clamps are acceptable as long as the worn or rusted area has not penetrated through the can.



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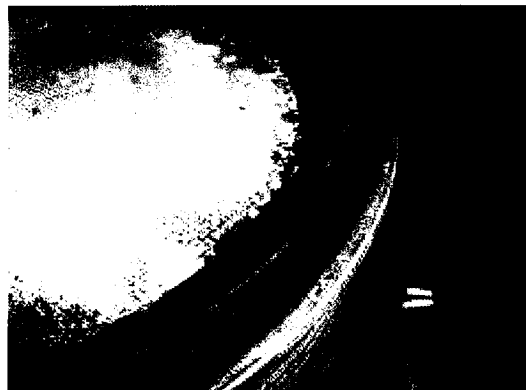
Major Dents: Punctures or major dents in the can caused by road hazards, handling, and/or shipping, are not acceptable. A major dent is defined by any indentation 2 inch (50.8 mm) in diameter or that exceeds 1/2 inch (12.7 mm) below the surface of the can.



Flange damage is unacceptable when the inner flange is crimped behind the outer flange; see the example to the left; however the flange damage on right is minor and acceptable.

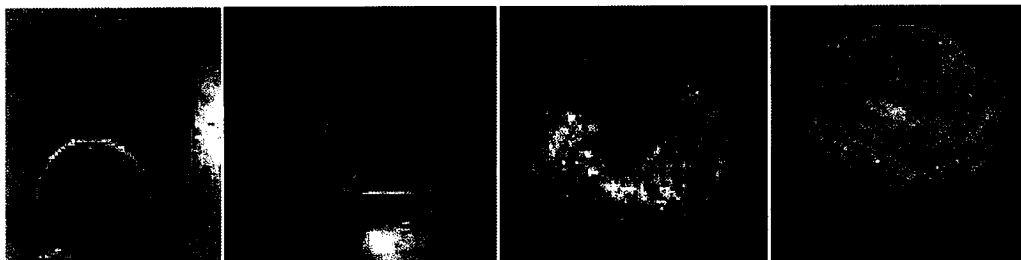


Not Acceptable Flange Damage



Acceptable Flange Damage

Packaging: Filter core must be packaged and returned in the barrels provided with the replacement component.

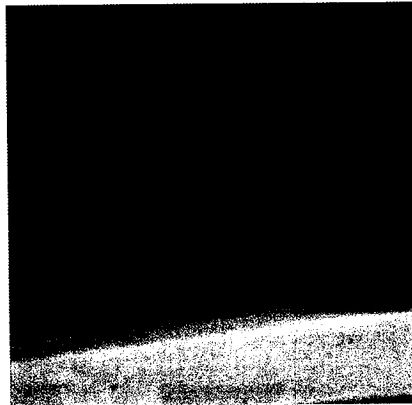


NOTE: If any major component of the aftertreatment system is replaced, the root cause of its failure must be repaired. Failure to make necessary repairs may result in a premature failure of the replacement.

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DOC/SCR 1-BOX SYSTEMS

Unacceptable core subject to partial credit: Dents that exceed 1/2" (12.7 mm) depth, due to non-operational damage, that may impede internal chamber functions, or are severe enough to crease the exterior chambers of the box, or holes and punctures through the casing.



Acceptable: Small, cosmetic dents caused by gravel or other minor road debris, that are less than 2" (50.8 mm) in diameter and 1/2" (12.7 mm) deep, or that have not creased or punctured the exterior chamber.

CONTACT INFORMATION

Core reimbursement amounts may vary for the acceptable and unacceptable reimbursement amounts. If you have any questions or concerns, please contact the Detroit™ Core Eligibility at core@daimler.com.

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