

DPF inspection



[Eric Wesselius](#) 3 posts since Feb 16, 2016

DPF inspection Feb 17, 2021 7:01 PM

Just removed DPFs on a 2019 New Cascadia DD15 vin KN8131 with 450,000 miles. Normally we install reman filter, due to a back order we need to clean the filters to get this unit back on the road. When inspecting the DPFs after removal, I noticed brown dots on the outlet side on both filters. My question is, are these filters ok to clean or have they failed? I believe they have failed but I've been wrong before and I need a second opinion.



DPF inspection

Tags: dpf inspection



[Chris Vanboom](#) 190 posts since Nov 21, 2014

Re: DPF inspection Feb 17, 2021 7:32 PM

The Detroit DPF inspection guide is attached. The spots you see are considered "weld splatter" and are not a concern

- [EPA07 10 GHG14 Exhaust - EGR - ATS Manual \(DDC-SVC-MAN-0083\)_ \(3\).pdf](#) 6.3 MB Preview



[Eric Wesselius](#) 3 posts since Feb 16, 2016

Re: DPF inspection Feb 17, 2021 8:09 PM

Awesome thanks a lot



[Scott Trippel](#) 4,095 posts since Dec 13, 2014

Re: DPF inspection Feb 17, 2021 9:51 PM

Do not send the DPF's for cleaning Detroit does not recommend that. Use remans. see 14TSREV1 letter attached.

As said above what you see is weld splatter

- [14TSRev1 DPF air cleaning.pdf](#) 668.0 KB Preview



[Eric Wesselius](#) 3 posts since Feb 16, 2016

Re: DPF inspection Feb 18, 2021 11:10 AM

Got it. Thanks for the quick response. We're being told by the dealer that they have no remans or originals in stock. Have 3 units down for this.



[Scott Trippel](#) 4,095 posts since Dec 13, 2014

Re: DPF inspection Feb 18, 2021 8:27 PM

Dam...not good, any Alliance brand?

If you do clean them be aware that a failure of the SCR system can happen. It is because those cells that do not get clean can run very hot. @ 1400 F the catalyst will plate out on the SCR cat effectively poisoning it and will cause low nox conversion. And because the whole DPF will not get to this temp the sensor may not see that or those cells reach critical temp.



[Kyle Siebert](#) 4,151 posts since Nov 14, 2014

Re: DPF inspection Feb 18, 2021 9:47 PM

DPF inspection

This info here Scott, is awesome. So the issue is a small hot spot section of the DPF getting to over 1400 deg F. That DPF material plates out (i guess breaks off or seperates from the DPF) and goes down stream to poison the entire SCR cat?



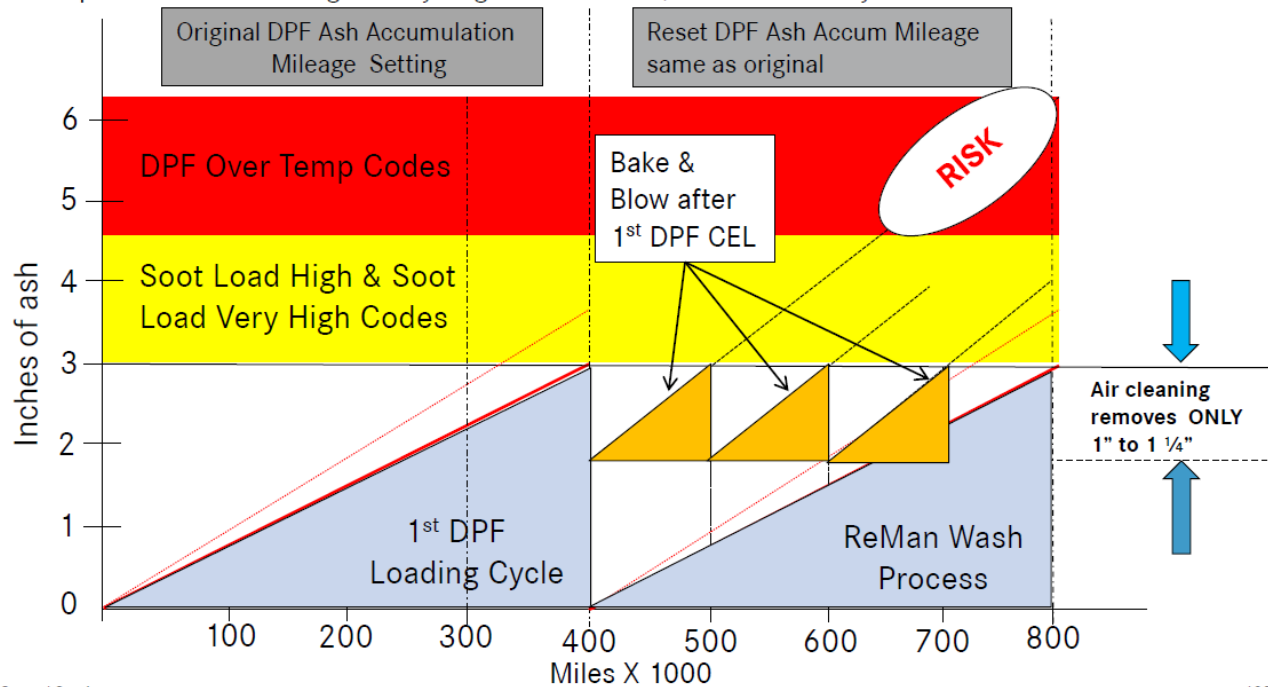
Scott Trippel 4,095 posts since Dec 13, 2014

Re: DPF inspection Feb 19, 2021 9:49 PM

yes it does see attachments

Low NOx Conversion – Platinum Migration

- When an overtemp occurs in either the DOC (code 3250/0) or DPF (code 3246/0), platinum is released from the coating & migrates to the SCR catalysts & contaminates them. The result is low NOx conversion efficiency (code 4364/x), especially at higher operational temps.
- Air cleaning will **NOT** allow you to travel the typical 300-400,000 miles before you get another DPF Ash Clean Request code. Air cleaning will only be good for 100-125,000 miles before you start to have issues.



Central Service

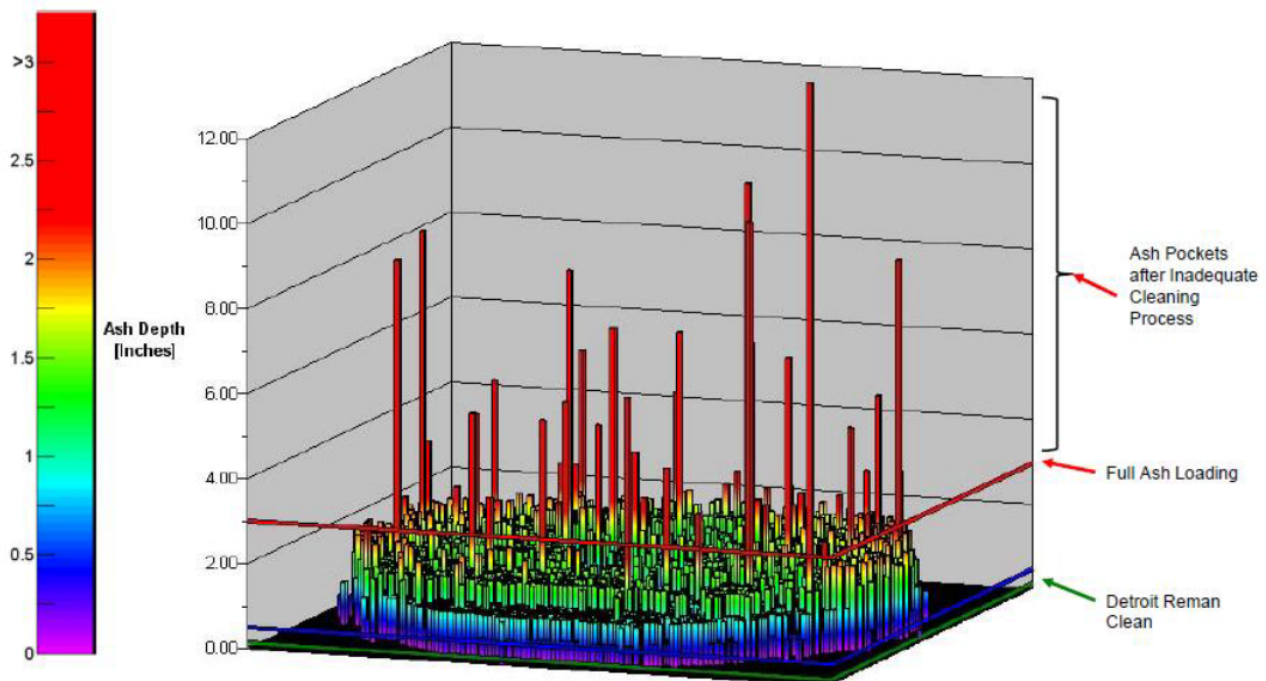
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DAIMLER

Cost of Inadequate Cleaning

- DPF will overheat if ash level in the DPF gets above 4.5" (range from 4.5"-5.25") or ash pockets are left unevenly disbursed through the substrate.
- When an EPA10 DPF Overheats (exceeds 790°C):
 - The substrate will crack allow unfiltered exhaust to pass through to the SCR
 - Platinum (the catalyst for burning the soot) vaporizes and plates out on the SCR
 - The SCR Catalyst is then "Poisoned" due to the migration of the Platinum
 - When migration occurs, the DDEC Code for "Low NOx Conversion Efficiency" illuminates the CEL
 - The One Box must be completely replaced when this occurs
- EPA10 One Box replacement cost to the customer is approximately \$15k

3D View of Ash Content After Inadequate Cleaning

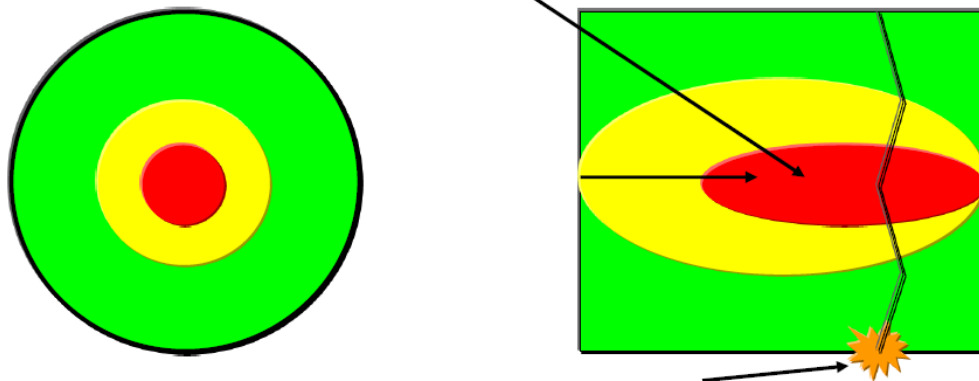


Daimler Trucks North America

Impact of Substandard Cleaning

- Ash pockets are dislodged from exhaust end, but not discharged
- Ash pocket insulation creates hot and cold zones causing high thermal gradients that lead to expansion cracking.

The center of the filter expands with heating



The relatively cool edge of the DPF does not expand and is in tension while resisting the expansion of the center. If the stress becomes too high, a fracture will initiate at the rim. As a brittle material, the crack will propagate across the entire DPF immediately after initiation. The crack results in some level of leakage.



[Ellis Boyd](#) 1 posts since Jan 16, 2018

Re: DPF inspection Feb 19, 2021 5:49 PM

I have seen something similar to this when someone has had to weld a dpf outlet temp sensor boss (bung). Some debris from welding contacted the outlet side of dpf.