Cabin Air Filter Rating in China
CATARC CN 95 → New supplement Sept 2020

What’s new: “Now also available for Combifilters”

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Cabin Air Filter Rating in China

INTRODUCTION

- due to the novel corona virus impact, China launched a new certification service, the “Automotive Air Conditioning Filter Rating” certification in February 2020.
- This new certification is a voluntary certification, not a China national mandatory standard
- The certification organization for this “CN95 class” cabin air filter rating is the China Automotive Advantech Certification (Tianjin) Co., Ltd., which is a subordinate to the China Automotive Technology and Research Center Co., Ltd. (CATARC).
- China Automotive Technology & Research Center Co., Ltd. (CATARC) is an enterprise directly under the state-owned Assets Management Committee of the State Council.
- In September 2020 a second test certification procedure for Combifilters was added.
CATARC offers two different test standard certificates
Cabin Air Filter Rating in China

Existing certification “…-019” for particle filter

New supplement “…-055” for Combifilter
Test CAC-PV18-019: February 2020 → for Particle Filter only

<table>
<thead>
<tr>
<th>Test air flow, m³/h</th>
<th>Initial pressure drop, Pa</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>≤30</td>
</tr>
<tr>
<td>300</td>
<td>≤70</td>
</tr>
<tr>
<td>450</td>
<td>≤150</td>
</tr>
<tr>
<td>600</td>
<td>≤220</td>
</tr>
</tbody>
</table>

7.3.2 Initial pressure drop

At different test air flow, the initial pressure drop of the air conditioning filter shall comply with the corresponding category in the table below.

The test is conducted according to the requirements of GB/T 32085.1-2015 or QCT 998-2015.

7.3.3 Ash collected quantity

When the test air flow is 300m³/h (or the flow rate designated by the manufacturer), the "ISO 12103-A2" dust test is used. When the pressure drop has increased by 200Pa, the ash collected quantity of the air conditioning filter shall not be less than 8g.

The test is conducted according to the requirements of GB/T 32085.1-2015 or QCT998-2015.

7.3.4 Fractional filtration efficiency

When the test air flow is 300m³/h (or the flow rate designated by the manufacturer), the "ISO 12103-A2" dust test is used. The air conditioning filter efficiency shall comply with the corresponding category in the table below.

The test is conducted according to the requirements of GB/T 32085.1-2015 or QCT 998-2015.

<table>
<thead>
<tr>
<th>Aerodynamic diameter, μm</th>
<th>Fractional filtration efficiency, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥0.3</td>
<td>≥60</td>
</tr>
<tr>
<td>≥2.5</td>
<td>≥75</td>
</tr>
<tr>
<td>≥10</td>
<td>≥90</td>
</tr>
</tbody>
</table>

Filter rating:
- CN60
- CN70
- CN80
- CN90
- CN95

The automotive cabin air filter is certified with different levels (CN60, ..., CN95).

CAC-PV18-019 from Feb 2020:

→ Pressure drop limits very low

→ Only for particle filters

→ No adsorption performance specified

Issue:
Combifilter with high gas adsorption performance and higher pressure drop don’t get the CATARC certification.
New Test CAC-PV18-055: September 2020 → for Combitfilter

- New supplement allows combifilters to get the certificate
- 2 different types (I / II) specified (difference in particle efficiency and adsorption performance)
- Certificate will show: CN95 Type I or II “Multi-Air Conditioning Filter”

- Pressure drop limits adjusted
- Gas adsorption included

FREUDENBERG FILTRATION TECHNOLOGIES
Conclusion

Background:
CATARC CN95 certificate is viewed in China as quality criteria for high performance Cabin Air Filters to protect people during the Corona pandemic (obvious reference to N95 face mask for marketing reasons only – but no technical similarities!)

Before September supplement “…-055” of the CATARC standard:
Many foreign Automotive OEMs failed to get a CATARC certification for existing combifilters
➢ many OEMs got disadvantages in China due to missing certificate

After the publication of the supplement “…-055” in September 2020:
Now more foreign OEMs can pass the CATARC certification test and can market their cars with CN95 Cabin Air Filter performance
CATARC certification does now include tests for most of the relevant cabin air contaminants.
➢ the CATARC supplement “…-055” was released with the support of Freudenberg China.