



Industrie Service

**Choose certainty.
Add value.**

TÜV SÜD Industrie Service GmbH · Ridlerstrasse 65 · 80339 Munich · Germany

Centrotec Sustainable AG
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59929 Brilon

Your reference/letter of	Our reference/name	Tel.-Extension/E-Mail	Fax-Extension	Date	Page
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Confirmation of the positive results from the tests of the air duct system "Air Excellent" according to "TÜV SÜD Standard TAK – 01-2013"

Dear Mr. Hohmann,

herewith we confirm to the Centrotec Sustainable AG the issuing of the Certificate 13/22/02 on the basis of the positive results from the tests on the air duct system "Air Excellent" according to "TÜV SÜD Standard TAK – 01-2013".

In addition to the process and production monitoring the following tests were carried out:

1. Air tightness
Tests of the air tightness of the system.
- **class C for AE45**
- **class D for AE23, AE34, AE35, AE48 und AE55**
2. Pressure drop
Tests of the pressure drop of the system components
- **statement of the results in the product documents**
3. Service temperature
Tests of the influence of the service temperature to the external pressure
- **definition in the manufacturer documents**
4. Reaction to fire
Tests of the reaction to fire according to EN13501-1
- **class E**

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TÜV SÜD Industrie Service GmbH
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Klimatechnik / for Refrigeration and Air
Conditioning
Klima- und Lufttechnik / Air Conditioning
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IS-TAK03-MUC
Ridlerstrasse 65



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5. Resistance to external pressure
Test of the resistance to external pressure expressed as the maximum concrete height which can be poured over the air duct system.
- statement in the manufactureres documents
6. Step-proofness
Determination of the maximum load caused by stepping on
- statement of the ring stiffness according to ISO99693
7. Bending radius
Test of the cross section for damages at the minimal bending radius stated by the manufacturer
- statement in the manufacturers documents
8. Mechanical connections
Test of the strength of the mechanical connections
- connection remains
9. Flexibility
Test of the handling of the air duct system and the determination of the forces necessary to bend the duct.
- statement in the manufacturers documents
10. Deflection/ stiffness
Test of the duct deflection between two supports with defined distance
- statement in the manufacturers documents
11. Antimicrobial activity
Test of the antimicrobial activity of the materials
- bacterial count is reduced by at least 99%
12. Thermo desorption
Test for volatile substances in the materials.
-The tested materials can be used as intended.
13. Antistatic function
Test of the electrical surface resistivity of the air handling materials
- the surface resistivity is under 10^{12} Ohm.
14. Cleaning procedure
Test if the intended cleaning procedure doesn't damage the inner surface of the duct.
- no damage of the inner surface of the duct

Kind regards

A handwritten signature in blue ink, appearing to read 'J. Bröckl'.

Center of Competence for
Refrigeration and Air Conditioning