

Burgaflex	Cleanliness of components				
	Specificatie nr.	Rev.	Date	Author	Page
BUR-SPEC-009	B	24-06-2014	Quality manager		1/3

1 Scope

This engineering specification defines the requirements for cleanliness of fittings, tubing and hose assemblies produced and delivered by Burgaflex BV. The requirements in this specification are based on the requirements of the SAE-J2064 specification. This engineering specification is a reference document and does not relieve the supplier of the responsibility to carry out other tests and inspections in order to guard the quality of the product.

2 Applicable

This specification is applicable on all hose assemblies and tubing according SAE J2064 produced by Burgaflex BV. As well as supplied parts to Burgaflex BV.

3 Responsibility



The quality manager is responsible for the maintenance and updating of this document.

4 Characteristics Cleanliness according to SAE-J2064

The Cleanliness of a hose or tube assembly must meet the requirements of the SAE-J2064_5.12.

5.12 Cleanliness Test—The bore of all hose and hose assemblies shall be clean and dry. When subjected to this test, there shall not be more than 270 mg/m² of foreign material. The test hose shall not be less than 300 mm.

5.12.1 PROCEDURE—Bend the hose or hose assembly to a 'U' shape, the legs of the 'U' being of equal length. Position the hose in a vertical plane and fill the hose to capacity with suitable solvent. Then filter the suitable solvent through a prepared Gooch crucible, sintered glass crucible, or 0.8 µm filter of known weight. After drying at approximately 70 °C for 20 min, determine by weight difference the insoluble contamination.

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Checked: Quality Manager	
Approved: Managing Director	

Burgaflex		Cleanliness van components			
Specificatie nr.	Rev.	Date	Author		Page
BUR-SPEC-009	B	24-06-2014	Quality manager		2/3

5 Specification of cleanliness test by Burgaflex

Description of test

The purpose of the cleanliness test is to determine the gravimetric contamination of tubing and hose assemblies at all stages in the production process.

Gravimetric contamination

The gravimetric contamination has 2 sections:



1. The biggest (metal) particle must not exceed the size of 250 µm.
2. Contamination must not exceed 270mg/m²

Reference: SAE-J2064-5.12

According to the basic principal a certain amount of fluid (white spirit or else defined) is filtered using a vacuum. The difference between the filter weight before and after filtration determines the contamination in mg/m². After filtration the filter must be dried in an oven and weighed again to determine the contamination. The weight is expressed as m(T). The weight before filtration is expressed as m(E). The gravimetric contamination is determined as followed:

$$m(G) = m(E) - m(T)$$

The focus during this research is to find the biggest metal particles; this must not exceed the size of 250µm.

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Checked: Quality Manager	
Approved: Managing Director	

Burgaflex		Cleanliness van components			
Specificatie nr.	Rev.	Date	Author		Page
BUR-SPEC-009	B	24-06-2014	Quality manager		3/3

Cleanliness test equipment

- Filter unit
- Collect bottle
- Vacuum pump
- White spirit (or else if defined)
- Microscope + camera
- Filters (0,8 µm)
- Microscope glass with scale of 0,01mm



Performing the cleanliness test

1. Dry a filter in the oven for about 30 minutes. After this, let the filter adapt to surrounding environment (ca. 15min). Make sure this procedure is followed to determine the correct weight of the filter. Then weigh the filter on the precision scale with in 0,1 mg. write the value in the report.
2. Fill up the assembly or tubing with the fluid and cap the ends. Leave this for about 5 min. make sure when using a hose assembly to create a U bend.
3. Place the dried filter in the filter unit.
4. Turn the assembly or tube around to make sure the fluid has reached the entire inside of your test sample. Empty the test sample in the filter unit.
5. Switch on the vacuum pump and leave this is on for about 4 minutes, to make sure all remains are sucked into the filter.
6. Take out the filter a dry this again in the oven for 30 minutes. (see section 1) as well as the adapting of the surrounding environment.
7. Weigh the filter again and write done the value in the report.
8. Fill in all dimensional data of your test sample.
9. De contamination result is now calculated in the report. This must not exceed 270 mg/m².
10. Place filter in Petri dish for further examination.

Examine filter through the microscope


Make sure the microscope camera is calibrated according work instruction Pr10_1 before the first use!!!

Examine the filter and search for the biggest part. Put the complete Petri dish under the microscope and look at the particles.

Use the program MICAM for measurement of the particles. Pictures can be saved and used for the report.

Finish the report.

For standard reports you can contact Burgaflex quality department via quality@burgaflex.nl

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