 Weber Automotive	<h1>Piping</h1>	<h1>WAN ZG - 0004</h1>								
<i>English Version</i>										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td data-bbox="177 1910 592 1951">Author: FE-AK/Beirle FE-PT/Schürer</td> <td data-bbox="592 1910 1007 1951">Pages: 4</td> <td data-bbox="1007 1910 1493 1951" rowspan="2">Replaces issue from: 30.04.2009</td> </tr> <tr> <td data-bbox="177 1951 592 1991">Checked : FE-AK/ U. Niedermeier</td> <td data-bbox="592 1951 1007 1991">Stage of revision: B</td> </tr> <tr> <td data-bbox="177 1991 592 2024">Release: GF/ E. Wizgall</td> <td data-bbox="592 1991 1007 2024">Distributed: P-QM/UM / M.Pleikies</td> <td data-bbox="1007 1991 1493 2024">Date of Issue: 03.06.2009</td> </tr> </table>			Author: FE-AK/Beirle FE-PT/Schürer	Pages: 4	Replaces issue from: 30.04.2009	Checked : FE-AK/ U. Niedermeier	Stage of revision: B	Release: GF/ E. Wizgall	Distributed: P-QM/UM / M.Pleikies	Date of Issue: 03.06.2009
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1. SCOPE OF APPLICATION

The standard WAN ZG-0004 – Piping – is applicable for components made for Weber Automotive unless:

- Explicitly stated otherwise on the drawing generated by a Weber Automotive company
- or
- The parts are made to drawings generated by third parties.

Differing specifications for surface finish and porosity on drawings precede the definitions contained in this standard.

2. AUTHORIZATION

The standard WAN ZG-0004 Index B is valid from: June 03, 2009
 WAN ZG-0004 exists in both German and English. In case of differing interpretations the German version is legally binding.

Release authorized by:

Markdorf, June 03, 2009

signed: Eberhard Wizgall
 Vice President & CTO

3. CHANGES:

document was modified on June 03, 2009

Stage of revision: B

Responsible for changes: author

Document management: DEP Quality Management/ Environmental Protection
 DEP Standards and Patent

Summary of changes:

page 3 – Tolerances / dimension 28 ; original author

WAN ZG-0004**4. CONTENTS****4.1 elastomer****4.1.1 material class**

Elastomer		EPDM ShA 65 ± 5 with inlay	HNBR ShA 65 ± 5 with inlay	AEM ShA 65 ± 5 with inlay
Application		- sea water - engine coolant	- oil - Blowby - air	- charge air
Temperature range °C		-50%+130°	-40%+150°	-30%+175°
Abreviation		A	B	C
EPDM	Ethylene - Propylene – Diene - Rubber	Abreviation as per DIN ISO 1629		
HNBR	Hydrogenated Acrylonitrile-Butadiene-Rubber			
AEM	Ethylene – Acrylate - Rubber			

Table 1: used materials

4.1.2 exception

For fuel hoses the guidelines of the following standards apply:

- **European market:**
DIN EN ISO 15584 with reference to ISO 7840 and ISO 1817
- **American market:**
**USCG: Boatbilder handbook Subpart J - Fuel Systems: Title 33 CFR
Section 183.540**

4.1.3 material requirements

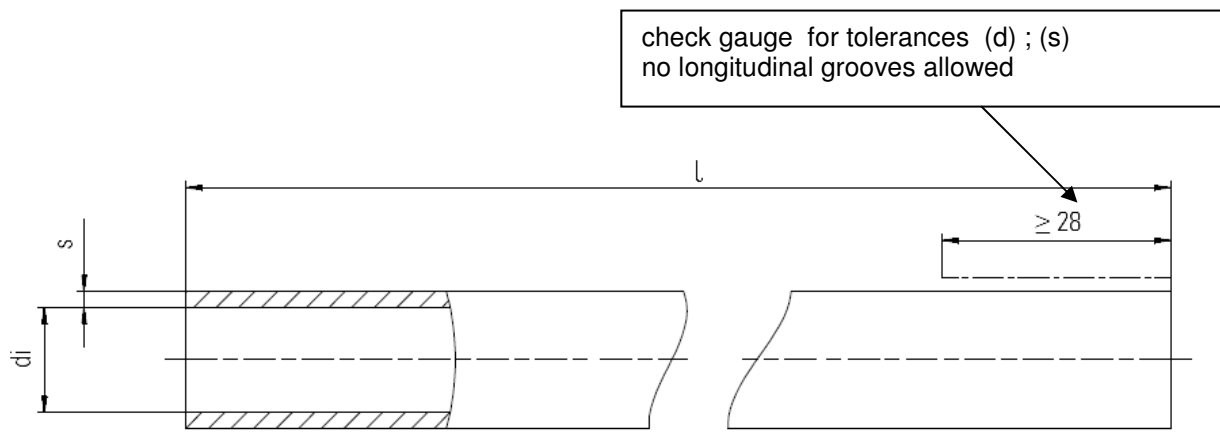
Elastomer must meet the specifications of the following table.

properties		material class			Test procedure
	unit	A	B	C	
hardness	Shore A	60-70			DIN 53505
Tensile Strength	N/mm ²	> 7			DIN 53504
Ozone resistance		X	X	X	
pressure range	bar	- 0,5 - 4			
contamination					
quantity	mg	max. 25			VDA Chapter 19
particle size	µm	max. 250			VDA Chapter 19

Table 2: Material specification

WAN ZG-0004**properties after heat ageing**

properties			material class		
			A	B	C
hold heat for 168h	heat ageing at	°C	130		
	hardness after testing	Shore A	≤ 77		
	hardness change	%	≤ 10		
	tensile strength after testing	N/mm ²	≥ 5		

Table 3: thermal ageing**4.2 Tolerances**

- For length (l) use the tolerances from EN ISO 1307.
- Diameter (d_i) to be tolerated to DIN 3021-3
- Wall thickness (s) to be tolerated to DIN 3021-3
- Hose connectors are specified by Weber Motor to DIN 3021.

WAN ZG-0004**4.3 naming of hoses****4.3.1 naming convention**

Naming to be carried out as per „WAN IN-0002“ , in german and english

4.3.2 Identification marking of components

Printed identification is specified in WAN ZG-0003 - identification marking of component with the following minimal information:

„arrow“ + „medium“ + Weber Motor GmbH or Logo + „Material number“ + „production date “

- **Weber Motor GmbH or Logo**
If the hose is too small for the full label, „Weber Motor GmbH“ or the Logo can be abbreviated to “WM”.
- **Production date**
The production date has to contain, at minimum, the year and the week of manufacture. Coding can be done to the suppliers' specification, providing the demands of WAN ZG-0003 are met.
Date coding and decoding tables are part of the initial sample submission and are to be transmitted to Weber Automotive.
- **Arrows**
The arrows define the direction of flow. Arrow direction is to be clearly specified on the drawing.

4.4 Additional applicable documents

DIN EN ISO1307
DIN 3021 Teil 1-3
DIN ISO 1629
DIN 53505
DIN 53504
VDA Band 19
WAN ZG-0003