

THE NETHERLANDS
(N E D E R L A N D)

EC TYPE-APPROVAL CERTIFICATE

Communication concerning:

- EC type-approval⁽¹⁾
 - ~~extension of EC type approval⁽¹⁾~~
 - ~~refusal of EC type approval⁽¹⁾~~
 - ~~withdrawal of EC type approval⁽¹⁾~~
- } of a type of
hydrogen component

with regard to Regulation (EC) number 79/2009, as implemented by Regulation (EU) number 406/2010.

EC type-approval number : **e4*79/2009*406/2010*0037*00 corr01**Reason for extension : Reason of correction:
- Typo in manufacturer address has been revised.

SECTION I

- 0.1. Make (trade name of manufacturer) : FITOK Incorporated
- 0.2. Type : FITOK 20D Series Tube Fittings
- 0.3. Means of identification of type, if marked on the component⁽²⁾ : Label attached to the body and number engraved
- 0.3.1. Location of that marking : Body of the component (see drawing)
- 0.5. Name and address of manufacturer : FITOK Incorporated
No. 164 Xinqu Village, Tiantou Community
Shijing Street
Pingshan District
Shenzhen 518118
China
- 0.7. In the case of components and separate technical units, location and method of affixing of the EC approval mark : N.A.



- 0.8. Name(s) and address(es) of assembly plant(s) : FITOK (Wuhan) Incorporated
Zhongbai Yangluo Industrial Park
Hanshi Road
Xinzhou District
Wuhan, Hubei Province 430415
China
- FITOK GmbH
Sprendlinger Landstr. 115
63069 Offenbach am Main
Germany
- 0.9. Name and address of manufacturer's representative (if any) :

SECTION II

1. Additional information (where applicable) : see Addendum
2. Technical service responsible for carrying out the tests : Kiwa Nederland B.V.
P.O.Box 137
7300AC Apeldoorn
The Netherlands
3. Date of test report : 16-07-2020
4. Number of test report : 190701486
5. Remarks (if any) : see Addendum
6. Place : Zoetermeer
7. Date : 06 July 2020
8. Signature :



R.F.R. Clement

Attachments:

– Test report.

⁽¹⁾ Delete where not applicable.

⁽²⁾ If the means of identification of type contains characters not relevant to describe the vehicle, component or separate technical unit types covered by this information document, such characters shall be represented in the documentation by the symbol '?' (e.g. ABC??123??).

ADDENDUM

to EC type-approval certificate number: e4*79/2009*406/2010*0037*00 corr01

relating to EC component type-approval of a hydrogen component or system

1. Additional information
 - 1.1. ~~Hydrogen system designed to use liquid hydrogen/~~Hydrogen system designed to use compressed (gaseous) hydrogen/~~Hydrogen component designed to use liquid hydrogen/~~Hydrogen component designed to use compressed (gaseous) hydrogen ⁽¹⁾
2. Specifications and test results
 - 2.1. ~~Containers designed to use compressed (gaseous) hydrogen~~
 - 2.1.1. ~~Container material specifications~~

| Material specifications | Applicable to material | | | | | | Details |
|-------------------------------|------------------------|-----------------|---------------|-------|-------|---------|---------|
| | Steel | Aluminium alloy | Plastic liner | Fibre | Resin | Coating | |
| Material manufacturer | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Type of material | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Material identification | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Heat treatment definition | ✓ | ✓ | | | | | |
| Chemical composition | ✓ | ✓ | | | | | |
| Cold or cryoforming procedure | ✓ | | | | | | |
| Welding procedure definition | ✓ | ✓ | | | | | |

- 2.1.2. ~~Container material test results~~

| Material test | Applicable to material | | | | | | Specified material value | Test value |
|-------------------------|------------------------|-----------------|---------------|-------|-------|---------|--------------------------|------------|
| | Steel | Aluminium alloy | Plastic liner | Fibre | Resin | Coating | | |
| Tensile test | ✓ | ✓ | ✓ | | | | | |
| Charpy impact test | ✓ | | | | | | | |
| Bend test | ✓ | ✓ | | | | | | |
| Macroscopic examination | ✓ | | | | | | | |



| Material test | Applicable to material | | | | | | Specified material value | Test value |
|-----------------------------------|------------------------|-----------------|---------------|-------|-------|---------|--------------------------|------------|
| | Steel | Aluminium alloy | Plastic liner | Fibre | Resin | Coating | | |
| Corrosion test | | √ | | | | | | |
| Sustained load cracking test | | √ | | | | | | |
| Softening temperature test | | | √ | | | | | |
| Glass transition temperature test | | | | | √ | | | |
| Resin shear strength test | | | | | √ | | | |
| Coating test | | | | | | √ | | |
| Hydrogen compatibility test | √ | √ | √ | √ | √ | | | |

2.1.3. Container test results

| Container test | Specified design value | Test result |
|---|------------------------|-------------|
| Burst Test | | |
| Ambient Temperature Pressure Cycle Test | | |
| LBB Performance Test | | |
| Bonfire test | | |
| Penetration Test | | |
| Chemical Exposure Test | | |
| Composite Flaw Tolerance Test | | |
| Accelerated Stress Rupture Test | | |
| Extreme Temperature Pressure Cycle Test | | |
| Impact Damage Test | | |
| Leak Test | | |
| Permeation Test | | |
| Boss Torque Test | | |
| Hydrogen Gas Cycling Test | | |

3. Restriction of use of the device (if any) : None

4. Remarks : None

⁽¹⁾ Delete where not applicable.

