

## TEST REPORT

No.: AJFTS25002251R01\_EN

Date: May 07,2025

Page 1 of 7

### WU'AN KELI FIGURED STEEL CO., LTD

NORTH OF QUANSHANG VILLAGE, KANGER CHENG TOWN, WUAN CITY, HANDAN CITY, HEBEI PROVINCE, CHINA

**Sample Description** : CAST IRON PIPES AND FITTINGS  
**Product specification** : DN50、DN100  
**Material and Mark** : GREY CAST IRON 200  
**Manufacturer** : WU'AN KELI FIGURED STEEL CO., LTD  
**Others** : IN-SH-CP-5627-25161

The above sample(s) data and information was / were submitted and identified on behalf of the client. SGS is not responsible for the authenticity, integrity and results of the data and information and / or the validity of the conclusion arising therefrom. Results apply to the sample as received.

\*\*\*\*\*

**SGS Ref. No.** : SHIN2504000164CPC01  
**Sample Receiving Date** : Apr 18,2025  
**Testing Period** : Apr 18,2025 to May 07,2025  
**Test Required** : EN 13501-1:2018 Fire classification of construction products and building elements—Part 1: Classification using data from reaction to fire tests.  
**Test result(s)** : See attached sheet

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd Anji Branch

*Echo*

Echo Li  
Approved signatory



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

No. 301, Sunlight Road, 2 Block, Sunlight Industry Zone, Anji County, Zhejiang Province, China 313300 t (86-572) 5018825 f (86-572) 5018829 [www.sgsgroup.com.cn](http://www.sgsgroup.com.cn)  
中国·浙江·安吉县阳光工业园二区阳光大道301号 邮编: 313300 t (86-572) 5018825 f (86-572) 5018829 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

**I. Test conducted**

This test is conducted as per EN 13501-1:2018 Fire classification of construction products and building elements---Part 1: Classification using data from reaction to fire tests. And the test methods as following:

1. EN 13823:2020+A1:2022 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item.
2. EN ISO 1182:2020, Reaction to fire tests for products – Non-combustibility test.
3. EN ISO 1716:2010, Reaction to fire tests for building products -- Determination of the gross heat of combustion (calorific value).

**II. Details of classified product**
**a) Nature and end use application**

The product “Cast iron pipes and fittings” is defined as a decorative sheet. Its classification is valid for the following end use application: Applied to the outside of flexible drainage pipe for anti-corrosiondecoration.

**b) Description**

|                    |                                                                                                                                      |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Sample description | Cast iron pipes and fittings                                                                                                         |
| Composition*       | Epoxy resin coatings(0.20kg/m <sup>2</sup> ) + Cast iron pipe(28.8kg/m <sup>2</sup> ) + Epoxy resin coatings(0.20kg/m <sup>2</sup> ) |
| Color              | Red                                                                                                                                  |
| Thickness          | Outside diameter: 109.5mm, wall thickness: 3.4mm                                                                                     |
| Sample size        | EN 13823: Φ109.5mm × 1500mm & Φ58.6mm × 1000mm                                                                                       |
| Test surface       | Red surface                                                                                                                          |

\*provided by client.

**Mounting and fixing:**

Calcium silicate board, with its density approximate 900kg/m<sup>3</sup>, thickness approximate 9mm, is as the substrate. The test specimens are fixed mechanically to the substrate. No joint in the long wing of the specimens.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

No. 301, Sunlight Road, 2 Block, Sunlight Industry Zone, Anji County, Zhejiang Province, China 313300 t (86-572) 5018825 f (86-572) 5018829 [www.sgsgroup.com.cn](http://www.sgsgroup.com.cn)  
 中国·浙江·安吉县阳光工业园二区阳光大道301号 邮编: 313300 t (86-572) 5018825 f (86-572) 5018829 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

**III. Test results**

| Test method               | Parameter                                                           | Number of tests | Results |
|---------------------------|---------------------------------------------------------------------|-----------------|---------|
| EN 13823                  | FIGRA <sub>0.2MJ</sub> (W/s)                                        | 3               | 2.3     |
|                           | FIGRA <sub>0.4MJ</sub> (W/s)                                        |                 | 2.3     |
|                           | Whether lateral flame spread (LFS) to the edge of specimen (Yes/No) |                 | No      |
|                           | THR <sub>600s</sub> (MJ)                                            |                 | 0.2     |
|                           | SMOGR <sub>A</sub> (m <sup>2</sup> /s <sup>2</sup> )                |                 | 0.7     |
|                           | TSP <sub>600s</sub> (m <sup>2</sup> )                               |                 | 0.5     |
|                           | Flaming particles or droplets (Yes/No)                              |                 | No      |
| *EN ISO 1182 <sup>a</sup> | ΔT/°C                                                               | /               | /       |
|                           | Δm/%                                                                |                 | /       |
|                           | t <sub>f</sub> /s                                                   |                 | /       |
| EN ISO 1716               | PCS MJ/kg <sup>a</sup>                                              | 3               | 0       |
|                           | PCS MJ/m <sup>2</sup> <sup>b</sup>                                  |                 | 0.88    |
|                           | PCS MJ/kg <sup>b</sup>                                              |                 | 4.41    |
|                           | PCS MJ/kg <sup>e</sup>                                              |                 | 0.37    |

**Note:**

ΔT — temperature rise [K]

Δm — mass loss [%]

t<sub>f</sub> — duration of sustained flaming [s]

PCS — gross calorific potential [MJ/kg or MJ/m<sup>2</sup>]

For the means of superscript a,b,e, please refer to the Annex A.

Remark with \* means: **CAST IRON** to be considered as reaction to fire Classes A1 and A1<sub>FL</sub> as provided for in Decision 2000/147/EC without the need for testing.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

No. 301, Sunlight Road, 2 Block, Sunlight Industry Zone, Anji County, Zhejiang Province, China 313300 t (86-572) 5018825 f (86-572) 5018829 [www.sgsgroup.com.cn](http://www.sgsgroup.com.cn)  
 中国·浙江·安吉县阳光工业园二区阳光大道301号 邮编: 313300 t (86-572) 5018825 f (86-572) 5018829 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

**IV. Classification and field of application**
**a) Reference of classification**

This classification has been carried out in accordance with **EN 13501-1:2018**.

**b) Classification**

The product, Cast iron pipes and fittings, in relation to its reaction to fire behaviour is classified:

| Fire behaviour |   | Smoke production |   |   | Flaming droplets |   |
|----------------|---|------------------|---|---|------------------|---|
| A1             | — | s                | 1 | , | d                | 0 |

**Reaction to fire classification: A1—s1, d0**

**Remark:** The classes with their corresponding fire performance are given in annex A.

**c) Field of application**

This classification is valid for the following end use applications:

- With all substrates classified as A1 or A2
- With mechanically fixing
- No joint

This classification is valid for the following product parameters:

- Characteristics of various layers identical to those as described in section II of this test reports.

**Statement:**

This declaration of conformity is only based on the result of this laboratory activity, the impact of the uncertainty of the results was not included.

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

**Warning:**

This classification report does not represent type approval or certification of the product.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

**Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com**

No. 301, Sunlight Road, 2 Block, Sunlight Industry Zone, Anji County, Zhejiang Province, China 313300 t (86-572) 5018825 f (86-572) 5018829 www.sgsgroup.com.cn  
 中国·浙江·安吉县阳光工业园二区阳光大道301号 邮编: 313300 t (86-572) 5018825 f (86-572) 5018829 sgs.china@sgs.com

**Annex A**
**Classes of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products**

| Class | Test method(s)                                 |     | Classification criteria                                                                                                                                                                 | Additional classification                                                    |
|-------|------------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| A1    | EN ISO 1182 <sup>a</sup>                       | and | $\Delta T \leq 30^{\circ}\text{C}$ , and<br>$\Delta m \leq 50\%$ , and<br>$t_f = 0$ (i.e. no sustained flaming)                                                                         | -                                                                            |
|       | EN ISO 1716                                    |     | $PCS \leq 2.0\text{MJ/kg}$ <sup>a</sup> and<br>$PCS \leq 2.0\text{MJ/kg}$ <sup>b c</sup> and<br>$PCS \leq 1.4\text{MJ/m}^2$ <sup>d</sup> and<br>$PCS \leq 2.0\text{MJ/kg}$ <sup>e</sup> | -                                                                            |
| A2    | EN ISO 1182 <sup>a</sup>                       | and | $\Delta T \leq 50^{\circ}\text{C}$ , and<br>$\Delta m \leq 50\%$ , and<br>$t_f \leq 20\text{ s}$                                                                                        | -                                                                            |
|       | EN ISO 1716                                    |     | $PCS \leq 3.0\text{MJ/kg}$ <sup>a</sup> and<br>$PCS \leq 4.0\text{MJ/m}^2$ <sup>b</sup> and<br>$PCS \leq 4.0\text{MJ/m}^2$ <sup>d</sup> and<br>$PCS \leq 3.0\text{MJ/kg}$ <sup>e</sup>  | -                                                                            |
|       | EN 13823                                       |     | $FIGRA \leq 120\text{W/s}$ and<br>$LFS < \text{edge of specimen}$ and<br>$THR_{600s} \leq 7.5\text{MJ}$                                                                                 | Smoke production <sup>f</sup> and<br>Flaming droplets/particles <sup>g</sup> |
| B     | EN 13823                                       | and | $FIGRA \leq 120\text{W/s}$ and<br>$LFS < \text{edge of specimen}$ and<br>$THR_{600s} \leq 7.5\text{MJ}$                                                                                 | Smoke production <sup>f</sup> and<br>Flaming droplets/particles <sup>g</sup> |
|       | EN ISO 11925-2 <sup>i</sup><br>Exposure = 30s  |     | within 60s $F_s \leq 150\text{mm}$                                                                                                                                                      |                                                                              |
| C     | EN 13823                                       | and | $FIGRA \leq 250\text{W/s}$ and<br>$LFS < \text{edge of specimen}$ and<br>$THR_{600s} \leq 15\text{MJ}$                                                                                  | Smoke production <sup>f</sup> and<br>Flaming droplets/particles <sup>g</sup> |
|       | EN ISO 11925-2 <sup>i</sup><br>Exposure = 30s  |     | $F_s \leq 150\text{mm}$ within 60 s                                                                                                                                                     |                                                                              |
| D     | EN 13823                                       | and | $FIGRA \leq 750\text{W/s}$                                                                                                                                                              | Smoke production <sup>f</sup> and<br>Flaming droplets/particles <sup>g</sup> |
|       | EN ISO 11925-2 <sup>i</sup><br>Exposure = 30s  |     | $F_s \leq 150\text{mm}$ within 60 s                                                                                                                                                     |                                                                              |
| E     | EN ISO 11925-2 <sup>i</sup><br>Exposure = 15s  |     | $F_s \leq 150\text{mm}$ within 20 s                                                                                                                                                     | flaming droplets/particles <sup>h</sup>                                      |
| F     | EN ISO 11925-2 <sup>i</sup><br>Exposure = 15 s |     | $F_s > 150\text{mm}$ within 20 s                                                                                                                                                        |                                                                              |



- <sup>a</sup> For homogeneous products and substantial components of non-homogeneous products.
- <sup>b</sup> For any external non-substantial component of non-homogeneous products.
- <sup>c</sup> Alternatively, any external non-substantial component having a  $PCS \leq 2,0 \text{ MJ/m}^2$ , provided that the product satisfies the following criteria of EN 13823:  $FIGRA \leq 20 \text{ W/s}$ , and  $LFS < \text{edge of specimen}$ , and  $THR_{600s} \leq 4,0 \text{ MJ}$ , and  $s1$ , and  $d0$ .
- <sup>d</sup> For any internal non-substantial component of non-homogeneous products.
- <sup>e</sup> For the product as a whole.
- <sup>f</sup>  $s1 = SMOGRA \leq 30 \text{ m}^2/\text{s}^2$  and  $TSP_{600s} \leq 50 \text{ m}^2$ ;  $s2 = SMOGRA \leq 180 \text{ m}^2/\text{s}^2$  and  $TSP_{600s} \leq 200 \text{ m}^2$ ;  $s3 = \text{not } s1 \text{ or } s2$
- <sup>g</sup>  $d0 = \text{No flaming droplets/ particles in EN 13823 within 600 s}$ ;  
 $d1 = \text{no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s}$ ;  
 $d2 = \text{not } d0 \text{ or } d1$ .  
 Ignition of the paper in EN ISO 11925-2 results in a  $d2$  classification.
- <sup>h</sup> Pass = no ignition of the paper (no classification).  
 Fail = ignition of the paper ( $d2$  classification).
- <sup>i</sup> Under conditions of surface flame attack and, if appropriate to the end-use application of the product, edge flame attack.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

No. 301, Sunlight Road, 2 Block, Sunlight Industry Zone, Anji County, Zhejiang Province, China 313300 t (86-572) 5018825 f (86-572) 5018829 [www.sgsgroup.com.cn](http://www.sgsgroup.com.cn)  
 中国·浙江·安吉县阳光工业园二区阳光大道301号 邮编: 313300 t (86-572) 5018825 f (86-572) 5018829 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

### Photo Appendix:



SGS authenticate the photo on original report only

\*\*\*End of Report\*\*\*



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com/en/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: [CN.Doccheck@sgs.com](mailto:CN.Doccheck@sgs.com)

No. 301, Sunlight Road, 2 Block, Sunlight Industry Zone, Anji County, Zhejiang Province, China 313300 t (86-572) 5018825 f (86-572) 5018829 [www.sgs.com](http://www.sgs.com)  
 中国·浙江·安吉县阳光工业园二区阳光大道301号 邮编: 313300 t (86-572) 5018825 f (86-572) 5018829 [sgs.china@sgs.com](mailto:sgs.china@sgs.com)