

# Certificate

## Quality management system for Manufacturer of Materials acc. to Directive 2014/68/EU

Certificate no.: 01 202 TWN/Q-12 0247.00

Name and address of the  
certificate holder:

**BOTH-WELL STEEL FITTINGS CO., LTD.  
No. 303, Renxin Road, Renwu District,  
Kaohsiung City 814020  
Taiwan, R.O.C.**

Herewith we certify that the material manufacturer has established and applies a Quality Management System. The system was audited according to the European Directive 2014/68/EU, Annex I, point 4.3, with regard to the materials as listed in the scope of approval.

Test basis:

**QM System acc. to EN 764-5, Clause 4.2 and  
AD 2000-Merkblatt W0**

Audit report no.:

01 202 TWN/Q-12 0247

Scope:

**Manufacturing of Carbon, Alloy, Stainless Steel Forged Fittings and Flanges, see annex to certificate: 01 202 TWN/Q-12 0247, revision 1 from 2023/05/08**

Manufacturing plant:

see annex 2

Validity:

**This certificate is valid to 2026-07-22.**

Cologne, 2023-07-01

  
Dipl.-Ing. (FH) Vera Ruff



TÜV Rheinland Industrie Service GmbH  
Notified Body for Pressure Equipment, ID-No. 0035  
Am Grauen Stein, D-51105 Cologne

E-108a

# Annex 2

## Quality management system for Manufacturer of Materials acc. to Directive 2014/68/EU

Certificate no.: 01 202 TWN/Q-12 0247.00

Name and address of the  
certificate holder: **BOTH-WELL STEEL FITTINGS CO., LTD.**  
**No. 303, Renxin Road, Renwu District,**  
**Kaohsiung City 814020**  
**Taiwan, R.O.C.**

Manufacturing plants: **BOTH-WELL STEEL FITTINGS CO., LTD.**  
**No. 46, Hua-Dong Road, Da-Fa Industrial Park,**  
**Da-Liao District,**  
**Kaohsiung City 831134**  
**Taiwan, R.O.C.**

Cologne,  
2023-07-01

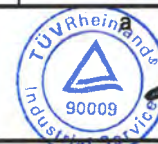
  
Dipl.-Ing. (FH) Vera Ruff

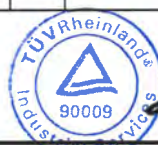
TÜV Rheinland Industrie Service GmbH  
Notified Body for Pressure Equipment, ID-No. 0035  
Am Grauen Stein, D-51105 Cologne



E-999

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                 |                                                                                                                       |                   |                                                                                                                                                                                                          |                      |                                                                                                             |         |                                                                       |                                                    |                                                                                                                                                                                  |            |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----|
| Scope according to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 | <input checked="" type="checkbox"/> Directive 2014/68/EU Annex I §4.3                                                 |                   | <input type="checkbox"/> EN 764-4                                                                                                                                                                        |                      | <input checked="" type="checkbox"/> AD 2000-Merkblatt W0                                                    |         | <input type="checkbox"/> FPC, Regulation (EU) No. 305/2011(System 2+) |                                                    |                                                                                                                                                                                  |            |    |
| Manufacturer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |                                                                                                                       |                   | Work                                                                                                                                                                                                     |                      | Nationality                                                                                                 |         | Date                                                                  |                                                    | Page No..                                                                                                                                                                        |            |    |
| Company Name: BOTH-WELL STEEL FITTINGS CO., .LTD.<br>Location:<br>HQ: No. 303, Renxin Road, Renwu District, Kaohsiung City 814020, Taiwan, R.O.C<br>Da Liao factory: No. 46, Hua-Dong Road, Da-Fa Industrial Park, Da-Liao District, Kaohsiung City 831134, Taiwan, R.O.C.                                                                                                                                                                                                                                                                                                                                                                                  |                                 |                                                                                                                       |                   | HQ: No. 303, Renxin Road, Renwu District, Kaohsiung City 814020, Taiwan, R.O.C<br>Da Liao factory: No. 46, Hua-Dong Road, Da-Fa Industrial Park, Da-Liao District, Kaohsiung City 831134, Taiwan, R.O.C. |                      | Taiwan                                                                                                      |         | 2023/05/08<br>Rev.: 1                                                 |                                                    | 1<br>of: 3                                                                                                                                                                       |            |    |
| Cur<br>-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Materials-term<br>Materials-No. | Material<br>Specification                                                                                             | Delivery<br>Cond. | Article<br>Type of Product                                                                                                                                                                               | Dimensions           |                                                                                                             |         |                                                                       | Weight<br>max<br><br>1=t /<br>2=kg<br>↓ res<br>ult | Technical<br>Specifications<br><br>Requirements<br><br>Technical<br>Regulations                                                                                                  | Remarks    |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                 |                                                                                                                       |                   |                                                                                                                                                                                                          | Thick-<br>ness<br>mm |                                                                                                             | Ø<br>mm |                                                                       |                                                    |                                                                                                                                                                                  |            |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                 |                                                                                                                       |                   |                                                                                                                                                                                                          | from                 | Up<br>to                                                                                                    | from    | Up<br>to                                                              |                                                    |                                                                                                                                                                                  |            |    |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2                               | 3                                                                                                                     | 4                 | 5                                                                                                                                                                                                        | 6a                   | 6b                                                                                                          | 7a      | 7b                                                                    | 8a                                                 | 8b                                                                                                                                                                               | 9          | 10 |
| <b>1. Materials according to harmonized European standards (hEN) and European Approval for Materials (EAM) acc. Directive 2014/68/EU</b><br>The use of the materials according to Directive 2014/68/EU is bound to the publication of Harmonized European Standards or to the qualification by a European material approval or to the particular material appraisal. With that the manufacturing reliability for equivalent material grades according to other standards (e.g. BS, AFNOR, ASME) is proved. The requirements and limits of the applicable code respectively the PED must be observed for the use of material grades listed in column 2 to 4. |                                 |                                                                                                                       |                   |                                                                                                                                                                                                          |                      |                                                                                                             |         |                                                                       |                                                    |                                                                                                                                                                                  |            |    |
| 01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1.4301, 1.4307, 1.4401, 1.4404  | EN 10222-5                                                                                                            | +AT               | Forging                                                                                                                                                                                                  | 1.5                  | 50                                                                                                          | 6       | 100                                                                   | 2                                                  | 40                                                                                                                                                                               | EN 10222-5 |    |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 | +AT = solution annealed<br>+AR = as rolled<br>+M = thermo mechanical treated<br>+N = normalized or normalizing formed |                   |                                                                                                                                                                                                          |                      | +NT = normalized and tempered<br>+QT = quenched and tempered<br>+S = soft annealed<br>+SR = stress relieved |         |                                                                       |                                                    | a = PMA for the use in pressure equipment in Directive 2014/68/EU necessary<br> <i>Shir</i> |            |    |

| Scope according to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                 | <input checked="" type="checkbox"/> Directive 2014/68/EU Annex I §4.3                                                                                                                                                                |                   | <input type="checkbox"/> EN 764-4                                                                                                                                                                        |                      | <input checked="" type="checkbox"/> AD 2000-Merkblatt W0 |         | <input type="checkbox"/> FPC, Regulation (EU) No. 305/2011(System 2+) |                                                    |                                                                                 |                                      |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------|---------|-----------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------|----|
| Manufacturer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |                                                                                                                                                                                                                                      |                   | Work                                                                                                                                                                                                     |                      |                                                          |         | Nationality                                                           | Date                                               | Page No..                                                                       |                                      |    |
| Company Name: BOTH-WELL STEEL FITTINGS CO., .LTD.<br>Location:<br>HQ: No. 303, Renxin Road, Renwu District, Kaohsiung City 814020, Taiwan, R.O.C<br>Da Liao factory: No. 46, Hua-Dong Road, Da-Fa Industrial Park, Da-Liao District, Kaohsiung City 831134, Taiwan, R.O.C.                                                                                                                                                                                                                                |                                 |                                                                                                                                                                                                                                      |                   | HQ: No. 303, Renxin Road, Renwu District, Kaohsiung City 814020, Taiwan, R.O.C<br>Da Liao factory: No. 46, Hua-Dong Road, Da-Fa Industrial Park, Da-Liao District, Kaohsiung City 831134, Taiwan, R.O.C. |                      |                                                          |         | Taiwan                                                                | 2023/05/08<br><br>Rev.: 1                          | 2<br><br>of : 3                                                                 | TÜV Rheinland Industrie Service GmbH |    |
| Cur -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Materials-term<br>Materials-No. | Material<br>Specification                                                                                                                                                                                                            | Delivery<br>Cond. | Article<br>Type of Product                                                                                                                                                                               | Dimensions           |                                                          |         |                                                                       | Weight<br>max<br><br>1=t /<br>2=kg<br>↓ res<br>ult | Technical<br>Specifications<br><br>Requirements<br><br>Technical<br>Regulations | Remarks                              |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |                                                                                                                                                                                                                                      |                   |                                                                                                                                                                                                          | Thick-<br>ness<br>mm |                                                          | Ø<br>mm |                                                                       |                                                    |                                                                                 |                                      |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |                                                                                                                                                                                                                                      |                   |                                                                                                                                                                                                          | from                 | Up<br>to                                                 | from    | Up<br>to                                                              |                                                    |                                                                                 |                                      |    |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2                               | 3                                                                                                                                                                                                                                    | 4                 | 5                                                                                                                                                                                                        | 6a                   | 6b                                                       | 7a      | 7b                                                                    | 8a                                                 | 8b                                                                              | 9                                    | 10 |
| <b>2. Materials according to the AD 2000-Code</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |                                                                                                                                                                                                                                      |                   |                                                                                                                                                                                                          |                      |                                                          |         |                                                                       |                                                    |                                                                                 |                                      |    |
| The use of the materials according to DGR 2014/68/EU is bound to the publication of Harmonized European Standards or to the qualification by a European material approval or to the particular material appraisal. With that the manufacturing reliability for equivalent material grades according to other standards (e.g. BS, AFNOR, ASME) is proved. The requirements and limits of the applicable code respectively the PED must be observed for the use of material grades listed in column 2 to 4. |                                 |                                                                                                                                                                                                                                      |                   |                                                                                                                                                                                                          |                      |                                                          |         |                                                                       |                                                    |                                                                                 |                                      |    |
| 02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1.4301, 1.4307, 1.4401, 1.4404  | EN 10222-5                                                                                                                                                                                                                           | +AT               | Forging                                                                                                                                                                                                  | 1.5                  | 50                                                       | 6       | 100                                                                   | 2                                                  | 40                                                                              | EN 10222-5 / AD2000 W2               |    |
| <b>Remarks</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                 | +AT = solution annealed<br>+AR = as rolled<br>+M = thermo mechanical treated<br>+N = normalized or normalizing formed<br>+NT = normalized and tempered<br>+QT = quenched and tempered<br>+S = soft annealed<br>+SR = stress relieved |                   |                                                                                                                                                                                                          |                      |                                                          |         |                                                                       |                                                    |                                                                                 |                                      |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |  = PMA for the use in pressure equipment in Directive 2014/68/EU necessary<br><i>Th. Shiu</i>                                                   |                   |                                                                                                                                                                                                          |                      |                                                          |         |                                                                       |                                                    |                                                                                 |                                      |    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |                                                                                                                       |                           |                                                                                                                                                                                                          |                            |                                                                                                                                                                                      |    |                                                                       |                                                                         |             |           |                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----------------------------------------------------------------------|-------------------------------------------------------------------------|-------------|-----------|---------------------|
| Scope according to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                 | <input checked="" type="checkbox"/> Directive 2014/68/EU Annex I §4.3                                                 |                           | <input type="checkbox"/> EN 764-4                                                                                                                                                                        |                            | <input checked="" type="checkbox"/> AD 2000-Merkblatt W0                                                                                                                             |    | <input type="checkbox"/> FPC, Regulation (EU) No. 305/2011(System 2+) |                                                                         |             |           |                     |
| Manufacturer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |                                                                                                                       |                           | Work                                                                                                                                                                                                     |                            | Nationality                                                                                                                                                                          |    | Date                                                                  |                                                                         | Page No..   |           |                     |
| Company Name: BOTH-WELL STEEL FITTINGS CO., .LTD.<br>Location:<br>HQ: No. 303, Renxin Road, Renwu District, Kaohsiung City 814020, Taiwan, R.O.C<br>Da Liao factory: No. 46, Hua-Dong Road, Da-Fa Industrial Park, Da-Liao District, Kaohsiung City 831134, Taiwan, R.O.C.                                                                                                                                                                                                                                                                                                                           |                                 |                                                                                                                       |                           | HQ: No. 303, Renxin Road, Renwu District, Kaohsiung City 814020, Taiwan, R.O.C<br>Da Liao factory: No. 46, Hua-Dong Road, Da-Fa Industrial Park, Da-Liao District, Kaohsiung City 831134, Taiwan, R.O.C. |                            | Taiwan                                                                                                                                                                               |    | 2023/05/08<br>Rev.: 1                                                 |                                                                         | 3<br>of : 3 |           |                     |
| Cur -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 | Materials-term<br>Materials-No.                                                                                       | Material<br>Specification | Delivery<br>Cond.                                                                                                                                                                                        | Article<br>Type of Product | Dimensions<br>Thick-<br>ness<br>mm<br>from Up to from Up to                                                                                                                          |    | Weight<br>max<br>1=t /<br>2=kg<br>↓ res<br>ult                        | Technical<br>Specifications<br>Requirements<br>Technical<br>Regulations |             | Remarks   |                     |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                 | 2                                                                                                                     | 3                         | 4                                                                                                                                                                                                        | 5                          | 6a                                                                                                                                                                                   | 6b | 7a                                                                    | 7b                                                                      | 8a          | 8b        | 9                   |
| <b>3. Materials according to international standards ( e. g. ASTM, ASME, IBR etc. )</b><br>The use of the materials according to DGR 2014/68/EU is bound to the publication of Harmonized European Standards or to the qualification by a European material approval or to the particular material appraisal. With that the manufacturing reliability for equivalent material grades according to other standards (e.g. BS, AFNOR, ASME) is proved. The requirements and limits of the applicable code respectively the PED must be observed for the use of material grades listed in column 2 to 4. |                                 |                                                                                                                       |                           |                                                                                                                                                                                                          |                            |                                                                                                                                                                                      |    |                                                                       |                                                                         |             |           |                     |
| 03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | A105                            | ASTM A105                                                                                                             | +AR / +N                  | Forging                                                                                                                                                                                                  | 1.5                        | 50                                                                                                                                                                                   | 6  | 100                                                                   | 2                                                                       | 40          | ASTM A105 | a (PMA is required) |
| 04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | LF2 (CL1)                       | ASTM A350                                                                                                             | +QT / +N                  | Forging                                                                                                                                                                                                  | 1.5                        | 50                                                                                                                                                                                   | 6  | 100                                                                   | 2                                                                       | 40          | ASTM A350 | a (PMA is required) |
| 05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | F11 (CL2), F22 (CL3)            | ASTM A182                                                                                                             | +NT                       | Forging                                                                                                                                                                                                  | 1.5                        | 50                                                                                                                                                                                   | 6  | 100                                                                   | 2                                                                       | 40          | ASTM A182 | a (PMA is required) |
| 06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | F91                             | ASTM A182                                                                                                             | +NT                       | Forging                                                                                                                                                                                                  | 1.5                        | 50                                                                                                                                                                                   | 6  | 100                                                                   | 2                                                                       | 40          | ASTM A182 | a (PMA is required) |
| 07                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | F304, F304L, F316, F316L, F317L | ASTM A182                                                                                                             | +AT                       | Forging                                                                                                                                                                                                  | 1.5                        | 50                                                                                                                                                                                   | 6  | 100                                                                   | 2                                                                       | 40          | ASTM A182 | a (PMA is required) |
| 08                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | F51,F60,F53                     | ASTM A182                                                                                                             | +AT                       | Forging                                                                                                                                                                                                  | 1.5                        | 50                                                                                                                                                                                   | 6  | 100                                                                   | 2                                                                       | 40          | ASTM A182 | a (PMA is required) |
| <b>Results</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                 | +AT = solution annealed<br>+AR = as rolled<br>+M = thermo mechanical treated<br>+N = normalized or normalizing formed |                           | +NT = normalized and tempered<br>+QT = quenched and tempered<br>+S = soft annealed<br>+SR = stress relieved                                                                                              |                            |  a = PMA for the use in pressure equipment in Directive 2014/68/EU necessary<br><i>Th. Shio</i> |    |                                                                       |                                                                         |             |           |                     |