Certificate

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

Certificate no.: 01 202 IND/Q-16 0017.00

Name and address of the

certificate holder:

Lal Metal Forge Private Limited

A - 7/1/13,

Electro Steel Casting Compound, South Side of GT Road Ind Area

Ghaziabad 201009

India

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

01 202 IND/Q-16 0017 Audit report no.:

Scope: Manufacture of Flanges, Rings, Tube-sheets, forgings in Carbon

> Steel, Alloy Steel, Duplex & Stainless Steel, see annex to certificate: 01 202 IND/Q-16 0017, revision 3 from 05.09.2024

Manufacturing plant: see certificate holder

Validity: This certificate is valid to 2025-08-23.

Cologne, 2025-01-13

Ines Krüger-Führ



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

E-108a





| Sco | pe: | ☑ Directive 20 | 014/68/EU Annex | I point 4. | 3 | | | N 764 | 1-4 | | | | ⊠ AD 2000-Merkblatt W 0 | | | |
|-------|---------------------|--------------------------------------|--|---------------|--------------------|------------|------------|------------|--------------------|-----------------|--------------------|-------------------|-----------------------------------|------------------------------------|---|--|
| | Certificat | te holder (Manufac | cturer of materials) | | Manu | ng plar | nt | | Nat | tionalit | :y | Page No.: | 1 | | | |
| Com | | | | | | o Stee | | | | | | | of: | 4 | TÜV Rheinland | |
| Loca | tion: | A-7/1/13 , Electro | Compound, Sou Industrial Area, | | | | | India | | | Date: | 05.09.2024 | Industrie Service | | | |
| | | South Side of G.1 Ghaziabad – 201 | muusmai Area, | ibau – | 201008 | ,. | | | | Rev.: | 3 | GmbH | | | | |
| Cur | | als-term | Material | Delivery | Article | | Dime | nsions | | | ight | | Technical | Remarks | | |
| - | Materi | als-No. | Specification | Cond. | Type of Product | | | | | m | ax | Sp | ecifications | | | |
| | | | | | rioddol | Thick | -ness | Q | Ø | R | | | quirements | | | |
| | | | | | | m | nm mm | | | 1=t / 2=kg | | | Technical | | | |
| | | | | from | Up | from | Up |] | res | K | egulations | | | | | |
| | | | | | | | to | | to | | ult | | | | | |
| 1 | 2 | 2 | 3 | 4 | 5 | 6a | 6b | 7a | 7b | 8a | 8b | | 9 | | 10 | |
| 1. N | laterials acco | rding to harm | onized European | standar | ds (hEN) and | Euro | pean | Appr | oval | for N | / later | ials | (EAM) acc. | Directive 20 | 014/68/EU | |
| parti | cular material appr | aisal. With that the | ctive 2014/68/EU is bou manufacturing reliabil nust be observed for tl | ity for equiv | alent material gra | des acc | ording | to othe | ndards er stand | or to ards (| the qua (e.g. B | alifica S, AFI | ition by a Europ NOR, ASME) is | ean material ap proved. The req | proval or to the uirements and limits of | |
| 1 | 1.5415,1.7335 | | EN 10222-2 | QT | | | | | | | | | | | | |
| 2 | 1.7383 | | EN 10022-2 | QT/NT | Flanges | 2 77 | 180 | 12.7 | 2000 | | | | | | | |
| 3 | 1.0352 | | EN 10222-2 | QT/NT | Rings | 25 | 500 | 100 | 2000 | | | | | | | |
| | | | | N | Tubesheets | 40 | 250 | 100 | 2000 | | | | | | | |
| 4 | 1.0425 | | EN 10222-2 | N | Nozzles Bonnets | 50 2.77 | 100 100 | 50 12.7 | 1000 1000 | | | | Synhein/and | | | |
| 5 | 1.4903 | | EN 10222-2 | NT | | | | | | | | | | 86586 | | |
| 6 | 1.4539 | | EN 10222-5 | AT | | | | | | | | | | Strial Sec | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | l | | I. | | l. | | | | | | | | | I. | | |

| <u>Remarks</u> | +AT = solution annealed | +NT = | normalized and tempered | a = PMA for the use in pressure equipment |
|----------------|---------------------------------------|-------|-------------------------|---|
| | +AR = as rolled | +QT = | quenched and tempered | in Directive 2014/68/EU neccessary |
| | +M = thermo mechanical treated | +S = | soft annealed | |
| | +N = normalized or normalizing formed | +SR = | stress relieved | |
| | | | | |



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|----------|------------------------------------|---------------------------------------|---|-------------------|--------------------------------------|-----------|------------|------------|----------|-----------------------|-----------|-------------|----------------------------|---------------|--|
| Sco | pe: | □ Directive 20 | 014/68/EU Annex | I point 4. | .3 | | □ E | :N 764 | 1-4 | | | | ⊠ AD 2000 | 0-Merkblatt V | V 0 |
| | Certificat | te holder (Manufac | cturer of materials) | | Manu | ıfacturin | ng plar | nt | | Nat | tionalit | ty | Page No.: | 2 | |
| Com | pany Name: | Lal Metal Forge P | rivate Limited | | A-7/1/13 , Electro | | | | | | | | of: | 4 | TÜV Rheinland |
| Loca | | | Steel Casting Compo | | Compound, Sour Industrial Area, C | | | | | India | | | Date: | 05.09.2024 | Industrie Service |
| | | South Side of G.T Ghaziabad – 2010 | T.Road Industrial Area 009 | Musinal Alea, C | Dau – A | 201009 | ,. | | | | Rev.: | 3 | GmbH | | |
| Cur - | ur Materials-term Materials-No. | | Material Specification | Delivery Cond. | Article Type of Product | | Dime | nsions | | Weight max | | | Technical pecifications | Remarks | |
| | 1 | ļ | 1 | | Floudet | Thick- | -ness | l ç | Ø | | | Rε | equirements | | |
| | 1 | ļ | 1 | 1 | | mr | | mm 1=t / | | - | Technical | | | | |
| | 1 | ļ | 1 | 1 |] | from | Lla | from | Lln | — r | | | Regulations | | |
| | 1 | ļ | 1 | 1 | | from | Up to | from | Up to | | res | | | | |
| 1 | | 2 | 3 | 4 | 5 | 6a | 6b | 7a | 7b | 8a | 8b | | 9 | | 10 |
| 2. N | laterials acco | rding to the Al | D 2000-Code | | | | | | | | | | | | |
| mate | rial appraisal. With | n that the manufactu | R 2014/68/EU is bound turing reliability for equing the observed for the users. | ivalent mate | erial grades accord | ding to d | other s | tandard | | | | | | | oval or to the particular and limits of the |
| 7 | 1.4301,1.4401,1. | | EN 10222-5 | AT | | | | | | $\overline{\uparrow}$ | | | 2000 W2 | Flanges – 150 | # ti 2500# |
| | 1.4307,1.4541,1. | .4571,1.4435 | 1 | | Flanges | 2 77 | 180 | 12.7 | 2000 | | | AD 2 | 2000 W10 | | |
| | | ļ | 1 | | Rings | | 500 | 100 | 2000 | | | | | | |
| 8 | 1.0460,1.0426,1. | .0425,1.0481 | EN 10222-2 | N | L Tubesheets | 40 | 250 | 100 | 2000 | | | | | Bonnets 150# | to 2500# |
| 9 | 1.0570 | ļ. | EN 10250-2 | N | Nozzles Bonnets | 50 | 100 100 | 50 12.7 | 1000 | | | VD 3 | 2000 W9 | | |
| 9 | 1.0570 | ļ | EN 10230-2 | | Donners | 2.11 | 100 | 12.7 | 1000 | | | AD Z | .000 vvə | | |
| 10 | 1.0565,1.0566,1. | .1106 | EN 10222-4 | N | | | | | | | | | | | |
| 11 | 1.0473 | | EN 10273 | N | Bars | | | 50 | 500 | | | | | R6586 S | |
| | 1 | ļ | | | | | | | | | | | | | |

| <u>Remarks</u> | +AT = solution annealed +AR = as rolled +M = thermo mechanical treated +N = normalized or normalizing formed | +NT = +QT = +S = +SR = | normalized and tempered quenched and tempered soft annealed stress relieved | a = PMA for the use in pressure equipment in Directive 2014/68/EU neccessary |
|----------------|---|---------------------------------|--|--|
|----------------|---|---------------------------------|--|--|



| Sco | pe: | ☑ Directive 20 | 014/68/EU Annex | I point 4 | .3 | | | N 764 | 4-4 | | | ⊠ AD | ⊠ AD 2000-Merkblatt W 0 | | | |
|----------|----------------------|---|---|-------------------|--------------------------------|------------|------------|------------|---------------------|-------------------|-----------------|------------------------------------|-------------------------|--|---|--|
| | Certifica | te holder (Manufac | cturer of materials) | | Mani | ufacturi | ng plar | nt | | Na | tionali | ty Page No |).: | 3 | | |
| Com | pany Name: | Lal Metal Forge F | Private Limited | | A-7/1/13 , Elect | | | | | | | of: | | 4 | TÜV Rheinland | |
| Loca | tion: | | Steel Casting Comp | | Compound, Sollindustrial Area, | | | | | India | | Date: | | 05.09.2024 | Industrie Service | |
| | | South Side of G.1 Ghaziabad – 201 | industrial Area, | abad – 201009. | | | | | Rev.: | | 3 | GmbH | | | | |
| Cur - | | als-term ials-No. | Material Specification | Delivery Cond. | Article Type of Product | | Dime | Dimensions | | | ight ax | Technical Specificatio | | | Remarks | |
| | | | | | rioddci | Thick | -ness | -ness Ø | | | | Requiremer | nts | | | |
| | | | | | | m | m | n mm | | 1=t / | | Technical | | | | |
| | | | | | | from | Up | from | Up | - 2= ↓ | kg res | Regulation | S | | | |
| | | | | | | 110111 | to | 110111 | to | • | ult | | | | | |
| 1 | | 2 | 3 | 4 | 5 | 6a | 6b | 7a | 7b | 8a | 8b | 9 | | | 10 | |
| 3. N | laterials acco | rding to other | standards | | | | | | | | | | | | | |
| mate | rial appraisal. Witl | h that the manufacti | R 2014/68/EU is bound uring reliability for equ t be observed for the u | ivalent mate | erial grades accor | ding to | other s | tandard | ards or ds (e.g. | to the . BS, A | qualif FNOR, | ication by a Eu , ASME) is prov | ropea ed. Th | n material approne requirements | oval or to the particular and limits of the | |
| | | | | | _ | | | | | | | | | | | |
| 12 | A | 105 | ASTM A 105 | N/NT | | | | | | | | | | PMA for the us | | |
| 13 | LF2,L | F3,LF6 | ASTM A 350 | NT | Flanges | 2.77 | 180 | 12.7 | 2000 | , | | | | necessary | Directive 2014/68/EU | |
| 14 | F1,F5,F6a,F9,F | F11,F12,F22,F91 | ASTM A 182 | QT/NT | Rings | 25 40 | 500 250 | 100 100 | 2000 |) | | | | | | |
| 15 | F316H,F321 | 04H,F316,F316L, I,F321H,F347 53,F55,F60.F91 | ASTM A 182 | AT | Nozzles Bonnets | 50 2.77 | 100 100 | 50 12.7 | 1000 1000 |) | | | | | | |
| 16 | , , | 748,F52,F50 0,F65,F70 | ASTM A 694 | QT/NT | | | | | | | | | | A Anna and and and and and and and and and | .) | |
| 17 | Gr 2 | c, Gr 4 | ASTM A 266 | N/NT | | | | | | | | | | Or Strial Service | <i>'</i> | |

| Remarks | +AT | = solution annealed | +NT | = | normalized and tempered | а | = PMA for the use in pressure equipment |
|---------|-----|------------------------------------|-----|---|-------------------------|---|---|
| | +AR | = as rolled | +QT | = | quenched and tempered | | in Directive 2014/68/EU neccessary |
| | +M | = thermo mechanical treated | +S | = | soft annealed | | |
| | +N | = normalized or normalizing formed | +SR | = | stress relieved | | |
| | | | | | | | |



| Sco | pe: | ☑ Directive 20 | 014/68/EU Annex | I point 4. | 3 | | | N 764 | 1-4 | | | | AD 2000-Merkblatt W 0 | | | |
|------|---|---------------------------------------|----------------------------|------------|--------------------------------|------------------|-------------------|--------------------|----------------------|--------|------------|------------|-----------------------|---|--|--|
| | Certificat | te holder (Manufac | turer of materials) | | Manu | ıfacturiı | ng plar | ıt | | Na | tionali | ty | Page No.: | 4 | | |
| Com | pany Name: | Lal Metal Forge P | rivate Limited | | A-7/1/13 , Electi | | | | | | | | of : | 4 | TÜV Rheinland | |
| Loca | ition: | A-7/1/13 , Electro | Compound, Sou | | | | | India | | | Date: | 05.09.2024 | Industrie Service | | | |
| | | South Side of G.T Ghaziabad – 2010 | Industrial Area, | 201009 | 9. | | | | Rev.: | 3 | GmbH | | | | | |
| Cur | | als-term | Material | Delivery | Article | | Dime | nsions | | | ight | | Technical | Remarks | | |
| - | Materi | als-No. | Specification | Cond. | Type of Product | | | | | max Sp | | | ecifications | | | |
| | | | | | rioduct | Thick | -ness | Q | Ø | | | Re | quirements | | | |
| | | | | | | m | m mi | | m | 1=t / | | | Technical | | | |
| | | | | | | from | Llo | from | Lln | | | | egulations | | | |
| | | | | | | from | Up to | from | Up to | ↓ | res ult | | | | | |
| 1 | : | 2 | 3 | 4 | 5 | 6a | 6b | 7a | 7b | 8a | 8b | | 9 | | 10 | |
| 3. N | . Materials according to other standards | | | | | | | | | | | | | | | |
| mate | 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 naterial 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. | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| 18 | | 04H,F316,F316L 21H,F347,F347H | ASME SA 965 | AT | | | | | | | | | | PMA for the us equipment in I necessary | se in pressure Directive 2014/68/EU | |
| 19 | | ,F316,F316L F316Ti | ASTM A 276 / ASTM A 479 | AT | Flanges Rings Tubesheets | 2.77 25 40 | 180 500 250 | 12.7 100 100 | 2000 2000 2000 | | | | | necessary | | |
| 20 | Gr.I, Gr.II,Gr. | III, Gr.IV, Gr.V | ASME SA 765 | QT/NT | - Nozzles Bonnets | 50 2.77 | 100 | 50 12.7 | 1000 | | | | | | | |
| 21 | 1.4006 | ,1.4021 | EN 10250-4 | QT/NT | | | | | | | | | | | | |
| 22 | 1.4057 | ,1.4313 | EN 10250-4 | QT | | | | | | | | | | Sunheinlande A | | |
| 23 | 1.4104 | 1.4104,1.4005 EN 10088-3 QT/AT | | | | | | | | | | | 86586 Solvier | | | |

| Remarks | +AT = solution anne | aled | +NT | = | normalized and tempered | а | = PMA for the use in pressure equipment |
|---------|---------------------|--------------------|-----|---|-------------------------|---|---|
| | +AR = as rolled | | +QT | = | quenched and tempered | | in Directive 2014/68/EU neccessary |
| | +M = thermo mech | anical treated | +S | = | soft annealed | | |
| | +N = normalized or | normalizing formed | +SR | = | stress relieved | | |
| | | | | | | | |