



# TESYDO, s.r.o.

Mariánské nám. 617/1, 617 00 Brno, Česká republika (CZ)

\* / Člen AIO, HK, TNK, CWS ANB (člen EWF, IIW a IAB) /\*

\* / Member of AIO, HK, TNK, CWS ANB (member of EWF, IIW a IAB) /\*

**Technická, školící, zkušební, certifikační a inspekční činnost**

Technical, training, testing, certification and inspection activity

**Autorizovaná osoba / Notifikovaná osoba, Authorized Body / Notified Body**

301-F02

|  |                    |                |
|--|--------------------|----------------|
| 1. <b>Welding procedure Qualification Record (WPQR) – Test certificate</b> | 2. Reference No.   | 3. Leaf 1      |
|  | <b>3338 – 2019</b> | 4. Total 3     |
|  |                    | 5. Check No. 7 |

|  |  |
|--|--|
| 6. Firm : <b>1. Miroslavská strojírna spol. s r.o.</b> | 7. Address : <b>Brněnská 523/28, 671 72 Miroslav</b> |
|--|--|

|   |   |
|---|---|
| 8. Inspecting procedure: <b>TOS – 301 – A</b> | 9. Date of Welding: <b>22. 11. 2019</b> |
|---|---|

|   |  |
|---|--|
| 10. Rules / Testing Standards : <b>ČSN EN ISO 15614-1: 2017 Level 2</b> | Specification and qualification of welding procedures for metallic materials - Qualification based on pre-production welding test. |
|---|--|

| 11. Range of                           | - test   | - approval   |
|--|--|--|
| 12. Welding process                    | 135 (MAG)                                      | 135 (MAG) - acc. to ČSN EN ISO 4063  |
| 13. Stage of mechanization (machinery) | manually                                       | - acc. to ČSN EN ISO 15614-1 art. 8.4.1  |
| 14. Joint type and weld variety        | BW - ČSN EN ISO 9692-1                         | BW + FW - acc. to ČSN EN ISO 15614-1 art. 8.4.3  |
| 15. Dimension of fillet weld [mm]      | a = —  | a = max. 2s - acc. to ČSN EN ISO 15614-1 table 7   |
| 16. Welding position                   | PA - ČSN EN ISO 6947                           | - acc. to ČSN EN ISO 15614-1 art. 8.4.2  |
| 17. Parent metal mark                  | 1.4462, group 10.1                             | - ČSN EN ISO 15614-1; CEN ISO/TR 15608   |
| 18. Parent metal thickness [mm]        | t = 40,0                                       | t = 20,0 to 80,0 - acc. to ČSN EN ISO 15614-1 tab. 7   |
| 19. Pipe outside diameter [mm]         | D = —  | D > 150 in position PC or PA, PF with a rotating D > 500 - acc. to ČSN EN ISO 15614-1 art. 8.3.3 |
| 20. Filler metal type                  | EN ISO 14343-A: G22 9 3 NL                     | - acc. to ČSN EN ISO 15614-1 art. 8.4.4 and 8.4.5  |
| 21. Shielding gas / Flux               | EN ISO 14175: M12                              | - acc. to ČSN EN ISO 15614-1 art. 8.5.2.1  |
| 22. Type of Welding current / Polarity | DC(+) / indirect                               | DC(+) / indirect - ČSN EN ISO 15614-1 art. 8.4.6   |
| 23. Angle branch pipe [°]              | $\alpha_{odb} = —$                             | - acc. to ČSN EN ISO 15614-1 art. 8.3.4  |
| 24. Heat input [kJ/mm]                 | Q = 0,77 to 0,94                               | Q = ± 25% - ČSN EN ISO 15614-1 art. 8.4.7  |
| 25. Metal transfer                     | dip-transfer, spray-transfer globular-transfer | - acc. to ČSN EN ISO 15614-1 art. 8.5.2.3  |
| 26. Preheat temperature [°C]           | T <sub>p</sub> = min. 140                      |  |
| 27. Interpass temperature [°C]         | T <sub>i</sub> = max. 150                      |  |

|                              |   |
|------------------------------|---|
| 28. Post weld heat treatment | After welding - free cooling on air according to product standard or EN ISO 17663 |
|------------------------------|---|

|                          |  |
|--------------------------|--|
| 29. Other informations : | Qualification of welder according to ČSN EN ISO 9606 - 1 |
|--------------------------|--|

30. *Certified that test welds were prepared, welded and tested in accordance with the requirements of the code, respective testing standards, with satisfactory result.*

31. Location of issue:  
Brno  
33. Date of issue:  
3. 12. 2019

Approved by Directive 2014/68/EU  
Ammex I, 3.1.2  
Procedure  
Ing. Vladimír KUDĚLKA, Ph.D.  
inspektor  
TESYDO, s.r.o.  
Notified Body by Article 20 2014/68/EU

32. Inspecting Authority:  
TESYDO, s.r.o.  
Ing. Vladimír Kudělka Ph.D.  
34. Name, signature

„Deutsch“ siehe Rückseite.  
„Čeština“ viz druhá strana.



TESYDO, s.r.o.

1.  
Title:

## CUSTOM SHEET

2. Number of order : 19 – 101 – 1

3. Total Orders:

1

4. Subscriber :

6. Inspecting Authority or Technical Inspecting Authority

1. Miroslavská strojírna spol. s r.o.

TESYDO, s.r.o.

5. Address :

Brněnská 523/28  
671 72 Miroslav

7. Address :

Mariánské nám. 1  
617 00 BRNO8. Subject  
of the  
contract:Welding procedure qualification by WPQR protocol, welding process: 135 (MAG), welded joint:  
BW (sheet - sheet), parent metal mark: 1.4462, group 10.1

9. Regulations / test standards : ČSN EN ISO 15614-1, ČSN EN ISO 15607, EN ISO 9606-1

10. List of samples

| 11. number of sample | 12. Welding process | 13. Weld variety | 14. Position | 15. Semi-finished product | 16. Dimensions [mm] | 17. Quantity |
|----------------------|---------------------|------------------|--------------|---------------------------|---------------------|--------------|
| 19 – 101 – 1         | 135                 | BW               | PA           | sheet / sheet             | t = 40,0            | 1            |
|                      |                     |                  |              |                           |                     |              |
|                      |                     |                  |              |                           |                     |              |

18. List of Documents

| 19. Num. | 20. Name                                    | 21. Num. Of documents   | 22. Num. of pages |
|----------|---|-------------------------|-------------------|
| 1        | Atest pattern material – sheet t = 40,0 mm  | 10073810-20014823-51452 | 7                 |
| 2        | Atest additional material – wire ø 1,0 mm   | 20196001133             | 1                 |
| 3        | Certificate of welder – ČSN EN ISO 9606 - 1 | 11/143445               | 1                 |
| 4        | Visual test report                          | 19-345-VT               | 1                 |
| 5        | Penetration test report                     | 19-346-PT               | 1                 |
| 6        | Radiographical test report                  | 19-347-RT               | 1                 |
| 7        | Tensile test report                         | 19-475-TT               | 1                 |
| 8        | Bend test report                            | 19-476-BT               | 1                 |
| 9        | Impact test report                          | 19-477-KC               | 1                 |
| 10       | Hardness test report                        | 19-478-HV               | 1                 |
| 11       | Makroscopic test report                     | 19-479-MA               | 1                 |
| 12       | pWPS protocol                               | 08/19                   | 1                 |
| 13       | WPS protocol                                | 08/19                   | 1                 |
| 14       | WPQR protocol                               | 3338-2019               | 3                 |
| 15       |   |                         |                   |
| 16       |   |                         |                   |
| 17       |   |                         |                   |

23. Note :

24. Exchange point: Brno

25. Handover date: 3. 12. 2019

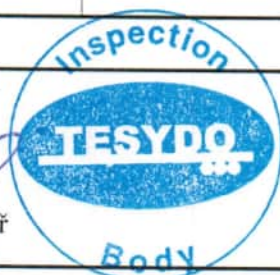
26. Handed over

27. Took over


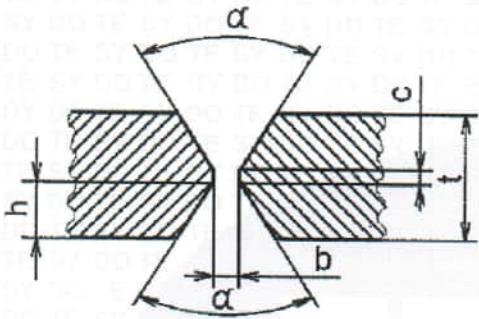
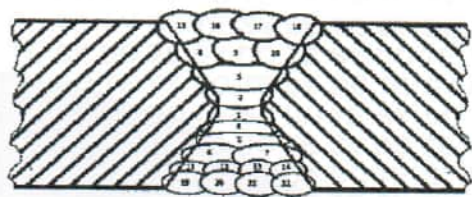


„Česky“ viz druhá strana,  
„Deutsch“ siehe Rückseite  
Terminology in „Cz“, „N“ on second side

Ing. Petr Kovář  
28. Name signature

28. Name signature




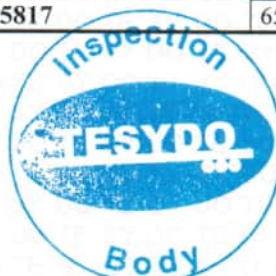


|    |                     | TESYDO, s.r.o.  |                               | 301-F02  |             |           |
|--|---------------------|---|-------------------------------|--|-------------|-----------|
|  |                     | 1. <b>DETAILS OF WELD TEST</b><br><b>NOTED LEAF OF WELDING PARAMETERS</b> |                               |  |             | 2. Leaf 2 |
| 5. WPQR No.  | 3338-2019           |   | 8. Manufacturer               | 1. Miroslavská strojírna spol. s r.o.  |             |           |
| 6. WPS No.   | 08/19               |   | 9. Location                   | Brněnská 523/28, 671 72 Miroslav   |             |           |
| 7. Testing piece No.   | 19-101-1            |   | 10. Welder's name             | ZAHRADNÍČEK Petr   |             |           |
| 11. <b>Joint weld</b>  |                     |   |                               |  |             |           |
| 12. Joint type   | BW                  |   | 15. Welding process           | 135 (MAG)  |             |           |
| 13. Weld variety   | multi-layer welding |   | 16. Welding position          | PA   |             |           |
| 14. Way of preparation weld bevel  | working, grinding   |   | 17. Cleaning                  | brushing, degreasing   |             |           |
| 18. <b>Parent metal</b>  |                     |   | 24. <b>Filler metal</b>       |  |             |           |
| 19. Marking of mater. 1  | 1.4462, group 10.1  |   | 25. Marking                   | EN ISO 14343-A: G22 9 3 NL   |             |           |
| 20. Marking of mater. 2  | 1.4462, group 10.1  |   | 26. Manufacturer / mark       | DRATEC GMBH / DT-1.4462  |             |           |
| 21. Metal thickness  | t = 40,0 mm         |   | 27. Marking                   | —  |             |           |
| 22. Outside diameter   | —                   |   | 28. Manufacturer / Trade mark | —  |             |           |
| 23. Other informations   | —                   |   | 29. Drying filler metal       | —  |             |           |
| 30. <b>Draft of joint</b>  |                     | 31. Dimensions  |                               | 32. <b>Welding procedure</b>   |             |           |
|  |                     | a [mm]  |                               |    |             |           |
|  |                     | —   |                               |  |             |           |
|  |                     | b [mm]  |                               |  |             |           |
|  |                     | 2 ± 0,5   |                               |  |             |           |
|  |                     | c [mm]  |                               |  |             |           |
|  |                     | 2 ± 0,5   |                               |  |             |           |
|  |                     | α [°]   |                               |  |             |           |
|  |                     | 60 ± 2  |                               |  |             |           |
| 33. <b>WELDING PARAMETERS</b>  |                     |   |                               |  |             |           |
| 34. Weld bead  | 1                   |   | 2-3                           | 4-5  | 6-22        |           |
| 35. Welding process  | 135                 |   | 135                           | 135  | 135         |           |
| 36. Diameter of filler metal [mm] - Ø  | 1,0                 |   | 1,0                           | 1,0  | 1,0         |           |
| 37. Welding current [A]  | 135 – 145           |   | 190 – 210                     | 250 – 270  | 200 – 220   |           |
| 38. Welding voltage [V]  | 19,4 – 19,8         |   | 27,0 – 27,6                   | 28,8 – 29,4  | 27,8 – 28,4 |           |
| 39. Type of Welding current and polarity   | DC (+)              |   | DC (+)                        | DC (+)   | DC (+)      |           |
| 40. Transfer of metal filler material  | dip                 |   | globular                      | spray  | globular    |           |
| 41. Speed feeding of wire [m.min <sup>-1</sup> ]                                   | 7,2                 |   | 12,1                          | 17,3   | 15,6        |           |
| 42. Speed feed of welding [mm.s <sup>-1</sup> ]                                    | 2,7                 |   | 5,1                           | 7,0  | 5,3         |           |
| 43. Heat input [kJ.mm <sup>-1</sup> ]  | 0,77 – 0,85         |   | 0,80 – 0,90                   | 0,82 – 0,90  | 0,83 – 0,94 |           |
| 44. Measured preheat temperature [°C]  | 145                 |   | 45. After - heat :            | 46. Type of automatic machine and welding head   |             |           |
| 47. Interpass temperature [°C]   | max. 150            |   | —                             | —  |             |           |
| 48. <b>Other informations</b>  |                     |   |                               | 60. <b>Post weld heat treatment or ageing</b>  |             |           |
| 49. Shielding gas - Shield of weld   | EN ISO 14175: M12   |   |                               | 61. Speed of heating   | —           |           |
| 50. Rate of flow gas [l/min]   | 17 - 18             |   |                               | 62. Speed of cooling   | —           |           |
| 51. Shielding gas - Shield of root   | —                   |   |                               | 63. Temperature  | —           |           |
| 52. Rate of flow gas [l/min]   | —                   |   |                               | 64. Dwell at temperature   | —           |           |
| 53. Angle of oscilation (max. width bead)  | —                   |   |                               | 65. <b>Inspecting Authority</b>  |             |           |
| 54. Type and dimension of wolfram electrode  | —                   |   |                               |   |             |           |
| 55. Oscilation – amplitude, frequency, time of dwell                               | —                   |   |                               |  |             |           |
| 56. Angle of positioning torch   | —                   |   |                               |  |             |           |
| 57. Electrode sparing (contacting Welding tip) [mm]                                | 10 - 12             |   |                               |  |             |           |
| 58. Details for Welding pulsation  | —                   |   |                               |  |             |           |
| 59. Details to grooving of root  | —                   |   |                               |  |             |           |
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Ing. Petr Kovář 22. 11. 2019



|  |                              |   |                             |   |                           |                             |                    |              |
|--|------------------------------|---|-----------------------------|---|---------------------------|-----------------------------|--------------------|--------------|
|    |                              | TESYDO, s.r.o.                          |                             |   | 301-F02                   |                             |                    |              |
| 1.   |                              | <b>DETAILS OF WELD TEST</b>             |                             |   | 2. Leaf 3                 |                             |                    |              |
|  |                              | <b>TEST RESULTS</b>                     |                             |   | 3. Total 3                |                             |                    |              |
|  |                              |   |                             |   | 4. Check No. 7            |                             |                    |              |
| 5. WPQR No.  |                              | 3338 – 2019                             | 6. Manufacturer             | 1. Miroslavská strojírna spol. s r.o.     |                           |                             |                    |              |
| 7. <b>NON – DESTRUCTIVE TEST</b>   |                              |   |                             |   |                           |                             |                    |              |
| 8. <b>Criteria for approval Welding procedure :</b> ČSN EN ISO 17637, ČSN EN ISO 3452-1, ČSN EN ISO 5817, ČSN EN ISO 15614-1 |                              |   |                             |   |                           |                             |                    |              |
| 9. TESTS   |                              | 10. Testing laboratory                  |                             | 11. Report reference No                   |                           | 12. Result                  |                    |              |
| 13. Vizual control (VT)  |                              | TESYDO s.r.o.                           |                             | 19-345-VT                                 |                           | satisfactory                |                    |              |
| 14. Penetration test (PT)  |                              | TESYDO s.r.o.                           |                             | —   |                           | satisfactory                |                    |              |
| 15. Magnetic test (MT)   |                              | —                                       |                             | 19-346-PT                                 |                           | —                           |                    |              |
| 16. Radiographic test (RT)   |                              | TESYDO s.r.o.                           |                             | 19-347-RT                                 |                           | satisfactory                |                    |              |
| 17. Ultrasonic test (UT)   |                              | —                                       |                             | —   |                           | —                           |                    |              |
| 18. <b>DESTRUCTIVE TESTS</b>   |                              |   |                             |   |                           |                             |                    |              |
| 19. <b>A) Transversal tensile test – Taking rule :</b> ČSN EN ISO 4136, ČSN EN ISO 15614-1                                   |                              |   |                             |   |                           |                             |                    |              |
| 20. Testing laboratory   |                              | TESYDO s.r.o.                           |                             |   | 21. Report reference No : |                             | 19-475-TT          |              |
| 22. Testing specimen No  | 23. Testing temperature [°C] | 24. Section [mm <sup>2</sup> ]          | 25. Yield point Re [MPa]    | 26. Tensile strength R <sub>m</sub> [MPa] | 27. Ductility A [%]       | 28. Reduction of area Z [%] | 29. Fracture point | 30. Result   |
| 1  | 20                           | 1014                                    | —                           | 748                                       | —                         | —                           | basic material     | satisfactory |
| 2  | 20                           | 1005                                    | —                           | 756                                       | —                         | —                           | basic material     | satisfactory |
| 31. <b>B) Bend test – Taking rule :</b> ČSN ISO 7438, ČSN EN ISO 5173, ČSN EN ISO 15614-1                                    |                              |   |                             |   |                           |                             |                    |              |
| 32. Testing laboratory   |                              | TESYDO s.r.o.                           |                             |   | 33. Report reference No : |                             | 19-476-BT          |              |
| 34. Testing specimen No  | 35. Testing temperature [°C] | 36. Thickness of specimen [mm]          | 37. Diameter of formel [mm] | 38. Bend Angle [°]                        | 39. Note                  |                             | 40. Result         |              |
| 1  | 20                           | 40,0 x 10,0                             | 38,0                        | 180                                       | SBB - no cracks           |                             | satisfactory       |              |
| 2  | 20                           | 40,0 x 10,0                             | 38,0                        | 180                                       | SBB - no cracks           |                             | satisfactory       |              |
| 3  | 20                           | 40,0 x 10,0                             | 38,0                        | 180                                       | SBB - no cracks           |                             | satisfactory       |              |
| 4  | 20                           | 40,0 x 10,0                             | 38,0                        | 180                                       | SBB - no cracks           |                             | satisfactory       |              |
| 41. <b>C) Impact test – Taking rule :</b> ČSN EN ISO 9016, ČSN EN ISO 15614-1  |                              |   |                             |   |                           |                             |                    |              |
| 42. Testing laboratory   |                              | TESYDO s.r.o.                           |                             |   | 43. Report reference No : |                             | 19-477-KC          |              |
| 44. Type   |                              | —                                       |                             |   | 45. Dimensions            |                             | —                  |              |
| 46. Testing specimen No  | 47. Location notch           | 48. Testing temperature [°C]            | 49. Values [J]              |   |                           | 50. Average value           | 51. Note           | 52. Result   |
| 1  | VWT 0/2                      | 20                                      | 99                          | 102                                       | 101                       | 100,6                       | —                  | satisfactory |
| 2  | VHT 1/2                      | 20                                      | 117                         | 122                                       | 117                       | 118,6                       | —                  | satisfactory |
| 53. <b>D) Hardness test – Taking rule :</b> ČSN EN ISO 9015-1, ČSN EN ISO 15614-1  |                              |   |                             |   |                           |                             |                    |              |
| 54. Testing laboratory   |                              | TESYDO s.r.o.                           |                             |   | 55. Report reference No : |                             | 19-478-HV          |              |
| 56. Type / load : HV 10  |                              | 57. Parent metal                        | 58. Heat affected zone      | 59. Weld metal                            | 60. Result                |                             |                    |              |
| 61. Location of measuring - weld face / root   |                              | see record                              | see record                  | see record                                | satisfactory              |                             |                    |              |
| 62. <b>E) Macroscopic examination – Taking rule :</b> ČSN EN ISO 17639, ČSN EN ISO 15614-1                                   |                              |   |                             |   |                           |                             |                    |              |
| 63. Testing laboratory   |                              | TESYDO, s.r.o.                          |                             |   | 64. Report reference No : |                             | 19-479-MA          |              |
|  |                              | evaluation of defects - ČSN EN ISO 5817 |                             |   | 65. Result :              |                             | satisfactory       |              |
| 66. Test carried out in the presence of:   |                              |   |                             |   |                           |                             |                    |              |
| 67. <u>Test results were acceptable</u>  |                              |   |                             |   |                           |                             |                    |              |
| 68. Head of Inspecting Authority :   |                              |   |                             |   |                           |                             |                    |              |
| „Deutsch“ siehe Rückseite „Čeština“ viz druhá strana.  |                              |   |                             |   |                           |                             |                    |              |



TESYDO, s.r.o.


Ing. Vladimír Kudělka, Ph.D. 3. 12. 2019

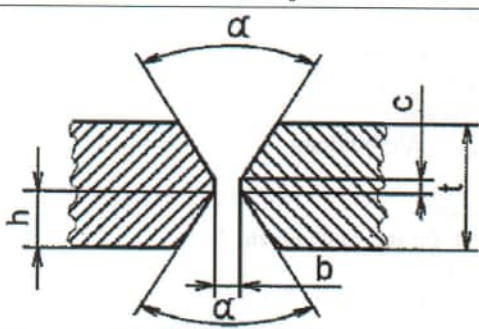

69. Name, signature, date



# Welding procedure specification „WPS“ according to ČSN EN ISO 15609 - 1 (Arc welding)

Leaf 1  
Total 1  
Check No. 6

|  |  |
|--|--|
| <b>1. Manufacturer :</b><br>Miroslavská strojírna spol. s r.o.<br>Brněnská 523/28<br>671 72 Miroslav | <b>10. Inspecting Authority :</b><br>TESYDO, s.r.o.<br>Mariánské nám. 1<br>617 00 Brno <div style="text-align: right; margin-top: 10px;">  </div> |
| <b>2. Location :</b> —   | <b>11. Way of preparation weld bevel :</b> working, grinding   |
| <b>3. Proof No. (WPS) :</b> 08/19  | <b>12. Way of cleaning :</b> brushing, degreasing  |
| <b>4. WPQR No :</b> 3338 – 2019  | <b>13. Parent metals specification</b> CEN ISO/TR 15608  |
| <b>5. Testing piece No :</b> 19 – 101 – 1  | - material 1: 1.4462, group 10.1   |
| <b>6. Welder's qualification</b> ČSN EN ISO 9606-1   | - material 2: 1.4462, group 10.1   |
| <b>7. Welding process :</b> 135 (MAG)  | <b>14. Welded thickness [mm]:</b> t = 40,0   |
| <b>8. Weld variety :</b> BW - multi layer  | <b>15. Outside diameter [mm] :</b> —   |
| <b>9. Informations about preparation weld surfaces :</b> ČSN EN ISO 9692-1                           | <b>16. Welding position :</b> PA   |

|  |  |  |
|--|--|--|
| <b>17. Draft of joint</b><br> | <b>18. Dimensions</b>  | <b>19. Welding procedure</b><br> |
|  | <b>a [mm]</b><br>—<br><b>b [mm]</b><br>2 ± 0,5<br><b>c [mm]</b><br>2 ± 0,5<br><b>α [°]</b><br>60 ± 2 |  |

|  |             |             |             |             |  |
|--|-------------|-------------|-------------|-------------|--|
| <b>20. Parameters for Welding</b>                |             |             |             |             |  |
| 21. Weld beat                                    | 1           | 2-3         | 4-5         | 6-22        |  |
| 22. Welding process                              | 135         | 135         | 135         | 135         |  |
| 23. Diameter of filler metal [mm] - Ø            | 1,0         | 1,0         | 1,0         | 1,0         |  |
| 24. Welding current [A]                          | 135 – 145   | 190 – 210   | 250 – 270   | 200 – 220   |  |
| 25. Welding voltage [V]                          | 19,4 – 19,8 | 27,0 – 27,6 | 28,8 – 29,4 | 27,8 – 28,4 |  |
| 26. Type of Welding current and polarity         | DC (+)      | DC (+)      | DC (+)      | DC (+)      |  |
| 27. Transfer of metal filler material            | dip         | globular    | spray       | globular    |  |
| 28. Speed Frediny of wire [m.min <sup>-1</sup> ] | 7,2         | 12,1        | 17,3        | 15,6        |  |
| 29. Speed feed of travel [m.min <sup>-1</sup> ]  | 2,7         | 5,1         | 7,0         | 5,3         |  |
| 30. Heat input [J.cm <sup>-1</sup> ]             | 0,77 – 0,85 | 0,80 – 0,90 | 0,82 – 0,90 | 0,83 – 0,94 |  |

|  |  |
|--|--|
| 31. Filler metal – classing and trade mark: EN ISO 14343-A: G22 9 3 NL / DRATEC GMBH / DT-1.4462 |  |
| 32. Rule for drying : —  | 42. Testing piece No : —                                     |
| 33. Shielding / Flux : EN ISO 14175: M12   | 43. Ober informations : Angle of oscillation - amplitude : — |
| - Shielding gas [l.min. <sup>-1</sup> ] : 17 - 18  | - frequency and pause : —                                    |
| - Shield of root [l.min. <sup>-1</sup> ] : —   | Angle of oscillation (max. bead width) : —                   |
| 34. Wolfram electrode, variety / diameter: —   | 44. Information for Welding pulsation : —                    |
| 35. Information about grooving / backing root : —  | 45. Information for Welding plasma : —                       |
| 36. Preheat temperature [°C] : min. 140  | 46. Angle of positioning torch : —                           |
| 37. Interpass temperature [°C] : max. 150  | 47. Type of automatic machine and welding head : —           |
| 38. Heat treatment / ageing : —  | 48. Peening of Weld : —                                      |
| 39. Time, temperature, procedure : —   | 49. Notes : —  |
| 40. Speed of heating and cooling : —   |  |
| 41. Sparing contacting welding tip from parent metal [mm] : 10 - 12                              |  |

|   |  |
|---|--|
| <b>50. Manufacturer</b><br>_____<br>_____ | <b>52. Inspecting Authority or Technical Inspecting Authority</b><br>Ing. Petr KOVÁŘ<br>WI-E-042<br>Ing. Petr Kovář 3. 12. 2019<br>  |
|---|--|

|   |   |
|---|---|
| 51. Date, name, signature and stamp of Welding Inspection | 53. Date, name, signature and stamp of Inspecting Authority |
|---|---|





TESYDO, s.r.o. - Testing laboratory

202-F01

### Protocol of Visual control according to ČSN EN ISO 17637

Revision 1  
Page 1 / 1

|  |                   |                          |
|--|-------------------|--------------------------|
| 1. Customer :<br><b>1. Miroslavská strojírna spol. s r.o.<br/>Brněnská 523/28<br/>671 72 Miroslav</b>      | 6. Order No.      | 19 – 101 – 1             |
|  | 7. Protocol No.   | <b>19 – 345 – VT</b>     |
|  | 8. WPS No.        | 08/19                    |
| 2. Product : Testing piece – sheet, position PA  | 9. WPQR No.       | 3338 – 2019              |
| 3. Material 1: 1.4462, group 10.1  | 10. Dimensions:   | t <sub>1</sub> = 40,0 mm |
| 4. Material 2: 1.4462, group 10.1  | 11. Dimensions:   | t <sub>2</sub> = 40,0 mm |
| 5. Tested part/area : Welding joint + HAZ  | 12. Drawing No.   | —                        |
| 13. Purpose of test: Welding procedure qualification record (WPQR) as per ČSN EN ISO 15614-1: 2017 Level 2 |                   |                          |
| 14. Testing range [%]: 100   | 15. Weld type: BW | 16. Welding method : 135 |

## 17. Specification of testing system

18. Testing rule : ČSN EN ISO 17637

19. Testing place : Brno NDT centrum

23. Testing method : direct

20. Lighting source: ceiling lights

24. Illuminance [lux] : 715

21. Criteria of assessment defects: ČSN EN ISO 5817

25. Requested quality level: B

22. Scales, measures and utilities : Cant gauge for welds Reg. No.15/15, defect depth gauge Reg. No. 16/15, caliper Reg. No. 018/07, steel ruler Reg. No.09/15, luxmeter Serial No. D42312, magnifying glass 4x, hand lamp

## 26. Characteristic of award defect

| 27. Sequence no. of defect | 28. Defect code and name according to ČSN EN ISO 6520-1 | 29. Ascertained size |        | 30. Assessment of award defect |                             |      |
|----------------------------|---|----------------------|--------|--------------------------------|-----------------------------|------|
|                            |   | h [mm]               | d [mm] | Quality level                  | Satisfactory/Unsatisfactory | Note |
| —                          | free of any inadmissible defects                        | —                    | —      | B                              | Satisfactory                | PA   |
|                            |   |                      |        |                                |                             |      |
|                            |   |                      |        |                                |                             |      |
|                            |   |                      |        |                                |                             |      |

## 31. Total assessment / resume

32.  Satisfactory**Test result is satisfactory - ČSN EN 5817 grade B**33.  Unsatisfactory

34. Tested by : Ing. Zbyněk Smetana

39. Stamp and signature

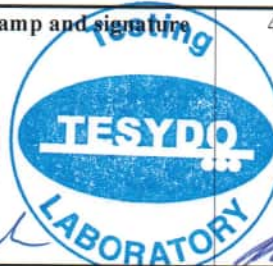
40. Inspection body


35. Certificate No : TESYDO-COP-157

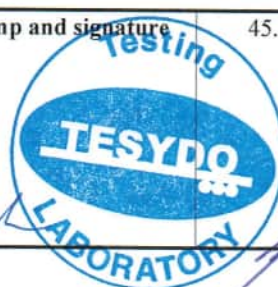
36. Evaluated by : Ing. Zbyněk Smetana

37. Certificate No. : TESYDO-COP-157

38. Assessment date: 26. 11. 2019



|  |  |   |                         |
|--|--|---|-------------------------|
|                                        | TESYDO, s.r.o. - Testing laboratory  |   | 202-F02                 |
|  | <b>Protocol of Penetration testing</b><br>according to ČSN EN ISO 3452-1, IICe grade 2 |   | Revision 3<br>Page 1/1  |
| 1. Customer :<br><b>1. Miroslavská strojírna spol. s r.o.</b><br><b>Brněnská 523/28</b><br><b>671 72 Miroslav</b>      |  | 6. Order No. 19 – 101 – 1<br>7. Protocol No. 19 – 346 – PT<br>8. WPS No 08/19     |                         |
| 2. Product : Testing piece – sheet, position PA  |  | 9. WPQR No.. 3338 – 2019  |                         |
| 3. Material 1 : 1.4462, group 10.1   |  | 10. Dimensions : t <sub>1</sub> = 40,0 mm   |                         |
| 4. Material 2 : 1.4462, group 10.1   |  | 11. Dimensions : t <sub>2</sub> = 40,0 mm   |                         |
| 5. Tested part/area : Welding joint + HAZ  |  | 12. Drawing No. —   |                         |
| 13. Purpose of test: Welding procedure qualification record (WPQR) as per ČSN EN ISO 15614-1: 2017 Level 2             |  |   |                         |
| 14. Testing range [%]: 100   |  | 15. Weld type: BW   | 16. Welding method: 135 |
| 17. Technical data   |  |   |                         |
| 18. Used preparation - producer: PFINDER KG  |  | 25. Penetrant:  |                         |
| 19. - type - batch No. - art of application  |  | <input checked="" type="checkbox"/> Colored <input type="checkbox"/> Fluorescent  |                         |
| 20. Penetrant : PFINDER 860 L:1101588 spray  |  | 26. Penetration time [min] : 15   |                         |
| 21. Cleaner : PFINDER 890 L:1101829 textil   |  | 27. Developing time [min] : 15  |                         |
| 22. Emulgator —  |  | 28. Temperature [°C] : 20   |                         |
| 23. Developer : PFINDER 871 L:1101798 spray  |  | 29. Surface : Ordinary surface  |                         |
| 24. Lighting source : ceiling lights   |  | 30. Illuminance [lux]: 749  |                         |
| 31. Assessment according to : ČSN EN ISO 23277, grade 2x   |  |   |                         |
| 32. Test results :<br>Penetration testing : 100% of joint surface and HAZ<br><br>There was no defects during the test. |  |   |                         |
| 33. Total assessment/resume:   |  |   |                         |
| <input checked="" type="checkbox"/> 34. Without registration of defects  |  | <input type="checkbox"/> 35. Registration of defect (other side of this protocol) |                         |
| <input type="checkbox"/> 36. Unsatisfactory  |  | <input type="checkbox"/> 37. Satisfactory after repair                            |                         |
|  |  | <input checked="" type="checkbox"/> 38. Satisfactory                              |                         |
| 39. Tested by: Ing. Zbyněk Smetana   |  | 44. Stamp and signature   |                         |
| 40. Certificate No.: TESYDO-COP-157  |  | 45. Inspection body   |                         |
| 41. Evaluated by : Ing. Zbyněk Smetana   |  |   |                         |
| 42. Certificate No.: TESYDO-COP-157  |  |   |                         |
| 43. Assessment date: 26. 11. 2019  |  |   |                         |







## Protocol of radiographical testing

|   |                 |                          |
|---|-----------------|--------------------------|
| 1. Customer :<br><b>1. Miroslavská strojírna spol. s r.o.</b><br><b>Brněnská 523/28</b><br><b>671 72 Miroslav</b> | 6. Order No.    | 19 – 101 – 1             |
|   | 7. Protocol No. | <b>19 – 347 – RT</b>     |
|   | 8. WPS No.      | 08/19                    |
| 2. Product : Testing piece – sheet, position PA   | 9. WPQR No.     | 3338 – 2019              |
| 3. Material 1: 1.4462, group 10.1   | 10. Dimensions: | t <sub>1</sub> = 40,0 mm |
| 4. Material 2: 1.4462, group 10.1   | 11. Dimensions: | t <sub>2</sub> = 40,0 mm |
| 5. Tested part/area: Welding joint + HAZ  | 12. Drawing No. | —                        |

13. Purpose of test: Welding procedure qualification record (WPQR) as per ČSN EN ISO 15614-1: 2017 Level 2

14. Testing range [%] : 100      15. Weld type: BW      16. Welding method: 135

## 17. Technical data

|  |   |
|--|---|
| 18. RTG apparatus/type: ---                      | 27. Distance: 650 mm                                |
| 19. Voltage [kV] : ---                           | 28. Exposure time : 8 min.                          |
| 20. Amperage: [mA] : ---                         | 29. Sign of film: KODAK T200                        |
| 21. Kind of radiant: Ir 192                      | 30. Folie : Pb 0,027                                |
| 22. Activity [Ci] : 95                           | 31. Invoking : manual                               |
| 23. Type of scale: EN Fe 6                       | 32. Emplacement of scale: On the side of the source |
| 24. Evaluation acc. to: EN ISO 10675-1           | 33. Qualification level: 1                          |
| 25. Specification of testing: ČSN EN ISO 17636-1 | 34. Radiographical technic: Class B                 |
| 26. Heat treatment: no                           | 35. Radiograph No.: 19-101-1                        |

## 36. Test results

| 37. Weld No | 38. Weld Type | 39. Diameter [mm] | 40. t [mm] | 41. Film size [cm] | 42. Blackness | 43. Discriminability | 44. Testing date | 45. Kind of defect | 46. Classification |    |
|-------------|---------------|-------------------|------------|--------------------|---------------|----------------------|------------------|--------------------|--------------------|----|
|             |               |                   |            |                    |               |                      |                  |                    | Yes                | No |
| 19-101-1    | BW            | ---               | 40,0       | 10 x 48            | 2,6           | W10                  | 28. 11. 2019     | 2011, 3032         | X                  |    |
|             |               |                   |            |                    |               |                      |                  |                    |                    |    |
|             |               |                   |            |                    |               |                      |                  |                    |                    |    |
|             |               |                   |            |                    |               |                      |                  |                    |                    |    |
|             |               |                   |            |                    |               |                      |                  |                    |                    |    |
|             |               |                   |            |                    |               |                      |                  |                    |                    |    |
|             |               |                   |            |                    |               |                      |                  |                    |                    |    |
|             |               |                   |            |                    |               |                      |                  |                    |                    |    |
|             |               |                   |            |                    |               |                      |                  |                    |                    |    |

## 47. Total assessment / resume:

48.  Satisfactory**Test result is satisfactory EN ISO 10675-1, grade 1**49.  Unsatisfactory

50. Tested by: Pavel Toušek

51. Certificate No. APC 101-01743

52. Evaluated by: Ing. Zbyněk Smetana

53. Certificate No. APC 101-02349


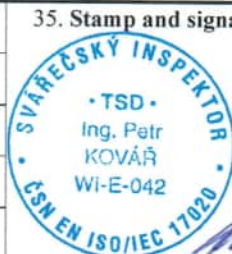
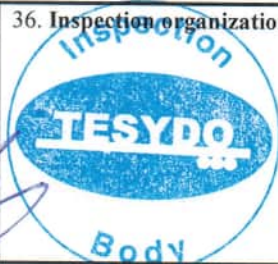
54. Assessment date: 29. 11. 2019

55. Stamp and signature

56. Inspection body





|   |   |                              |  |                        |   |                          |           |           |   |
|---|---|------------------------------|--|------------------------|---|--------------------------|-----------|-----------|---|
|                     | TESYDO, s.r.o. - Testing Laboratory   |                              | 204-F15  |                        |   |                          |           |           |   |
|   | <b>Transverse Tensile Test Report</b><br>of weld joint according to ČSN EN ISO 4136 |                              | Revision 1<br>Page 1/1   |                        |   |                          |           |           |   |
| 1. Customer :<br><b>1. Miroslavská strojirna spol. s r.o.</b><br>Brněnská 523/28<br>671 72 Miroslav |   |                              | 6. Order No. 19 – 101 – 1<br>7. Report No. <b>19 – 475 – TT</b><br>8. WPS No. 08/19  |                        |   |                          |           |           |   |
| 2. Product : Testing piece – sheet  |   |                              | 9. PQR No. 3338 – 2019   |                        |   |                          |           |           |   |
| 3. Basic material 1: 1.4462, group 10.1   |   |                              | 10. Dimension : t1 = 40,0 mm   |                        |   |                          |           |           |   |
| 4. Basic material 2: 1.4462, group 10.1   |   |                              | 11. Dimension : t2 = 40,0 mm   |                        |   |                          |           |           |   |
| 5. Tested part/area : Welding joint   |   |                              | 12. Drawing No. –  |                        |   |                          |           |           |   |
| 13. Purpose of test: Welding procedure qualification record (WPQR) acc. to ČSN EN ISO 15614-1       |   |                              |  |                        |   |                          |           |           |   |
| 14. Filler material : EN ISO 14343-A: G22 9 3 NL  |   | 15. Weld type : BW (X)       | 16. Welding method : 135   |                        |   |                          |           |           |   |
| 17. Test conditions and results   |   |                              |  |                        |   |                          |           |           |   |
| 18. Test specimen No.   | 19. Test temperature [°C]   | 20. Specimen dimensions [mm] | 21. Cross section [mm <sup>2</sup> ]   | 22. F <sub>m</sub> [N] | 23. R <sub>e</sub> [MPa]  | 24. R <sub>m</sub> [MPa] | 25. A [%] | 26. Z [%] | 27. Place of failure, fracture appearance |
| 1   | 20  | 24,98x40,63                  | 1014   | 759441                 | –   | 748                      | –         | –         | BM  |
| 2   | 20  | 25,29x39,75                  | 1005   | 758628                 | –   | 756                      | –         | –         | BM  |
|   |   |                              |  |                        |   |                          |           |           |   |
|   |   |                              |  |                        |   |                          |           |           |   |
|   |   |                              |  |                        |   |                          |           |           |   |
|   |   |                              |  |                        |   |                          |           |           |   |
| 28. Notes : BM – Basic Material, HAZ – Heat Affected Zone, WM – Weld Metal                          |   |                              |  |                        |   |                          |           |           |   |
| Test machine A. J. Amsler s.n. 1094/11/552-K2179 calibration sheet n. 3061-1-10                     |   |                              |  |                        |   |                          |           |           |   |
| 29. Overall assessment / conclusion :   |   |                              |  |                        |   |                          |           |           |   |
| 30. <input checked="" type="checkbox"/> Passed  |   |                              |  |                        |   |                          |           |           |   |
| <b>Test result is satisfactory</b>  |   |                              |  |                        |   |                          |           |           |   |
| 31. <input type="checkbox"/> Failed   |   |                              |  |                        |   |                          |           |           |   |
| 32. Tested by : Ing. Petr Kovář   |   |                              | 35. Stamp and signature  |                        | 36. Inspection organization   |                          |           |           |   |
| 33. Certificate No. : WI-E-042  |   |                              |  |                        |  |                          |           |           |   |
| 34. Evaluated by : Ing. Petr Kovář  |   |                              |  |                        |   |                          |           |           |   |
| 34. Certificate No. : WI-E-042  |   |                              |  |                        |   |                          |           |           |   |
| 35. Date of evaluation : 3. 12. 2019  |   |                              |  |                        |   |                          |           |           |   |





## Weld Bend Test Report

according to ČSN EN ISO 5173

|  |   |
|--|---|
| <b>1. Customer :</b><br><b>1. Miroslavská strojírna spol. s r.o.</b><br><b>Brněnská 523/28</b><br><b>671 72 Miroslav</b> | <b>6. Order No.</b> 19 – 101 – 1<br><b>7. Report No.</b> 19 – 476 – BT<br><b>8. WPS No.</b> 08/19 |
| <b>2. Product :</b> Testing piece – sheet  | <b>9. WPQR No.</b> 3338 – 2019  |
| <b>3. Basic material 1:</b> 1.4462, group 10.1   | <b>10. Dimension :</b> t1 = 40,0 mm   |
| <b>4. Basic material 2:</b> 1.4462, group 10.1   | <b>11. Dimension :</b> t2 = 40,0 mm   |
| <b>5. Tested part/area :</b> Welding joint   | <b>12. Drawing No.</b> –  |

**13. Purpose of test:** Welding procedure qualification record (WPQR) acc. to ČSN EN ISO 15614-1

**14. Filler material :** EN ISO 14343-A: G22 9 3 NL

**15. Weld type :** BW (X)

**16. Welding method :** 135

**17. Test conditions and results**

| 18. Specimen No. | 19. Type of bend | 20. Test temperature [°C] | 21. Specimen dimensions [mm] | 22. Mandrel diameter [mm] | 23. Bend angle [°] | 24. Support distance [mm] | 25. L [%] | 26. R <sub>mo</sub> [MPa] | 27. Evaluation of cracks, fracture appearance |
|------------------|------------------|---------------------------|------------------------------|---------------------------|--------------------|---------------------------|-----------|---------------------------|---|
| 1                | SBB              | 20                        | 40,0x10,0                    | 40,0                      | 180                | 160,0                     | —         | —                         | no cracks                                     |
| 2                | SBB              | 20                        | 40,0x10,0                    | 40,0                      | 180                | 160,0                     | —         | —                         | no cracks                                     |
| 3                | SBB              | 20                        | 40,0x10,0                    | 40,0                      | 180                | 160,0                     | —         | —                         | no cracks                                     |
| 4                | SBB              | 20                        | 40,0x10,0                    | 40,0                      | 180                | 160,0                     | —         | —                         | no cracks                                     |
|                  |                  |                           |                              |                           |                    |                           |           |                           |   |
|                  |                  |                           |                              |                           |                    |                           |           |                           |   |
|                  |                  |                           |                              |                           |                    |                           |           |                           |   |

**28. Notes :**

Type of bend : **TFB** – Transverse face bend  
**TRB** – Transverse root bend

**29. Overall assessment / conclusion:**

30.  Passed

**Test result is satisfactory**

31.  Failed

**32. Tested by :** Ing. Petr Kovář

**33. Certificate No.** WI-E-042

**34. Evaluated by :** Ing. Petr Kovář

**35. Certificate No.** WI-E-042

**36. Date of evaluation:** 3. 12. 2019


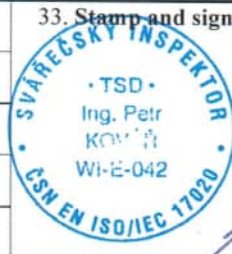
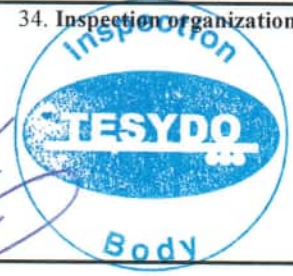
**37. Stamp and signature**



**38. Inspection organization**





|    | TESYDO, s.r.o. - Testing Laboratory  |   | 204-F16   |     |   |         |  |   |   |   |
|--|--|---|---|-----|---|---------|--|---|---|---|
|  | <b>Bending Impact Test Report</b><br>of weld joints according to ČSN EN ISO 9016 |   | Revision 1<br>Page 1/1  |     |   |         |  |   |   |   |
| 1. Customer :<br><b>1. Miroslavská strojírna spol. s r.o.</b><br><b>Brněnská 523/28</b><br><b>671 72 Miroslav</b>                |  |   | 6. Order No. 19 – 101 – 1<br>7. Report No. <b>19 – 477 – KV</b><br>8. WPS No. 08/19 |     |   |         |  |   |   |   |
| 2. Product : Testing piece – sheet   |  |   | 9. WPQR No. 3338 – 2019   |     |   |         |  |   |   |   |
| 3. Basic material 1: 1.4462, group 10.1  |  |   | 10. Dimension : t1 = 40,0 mm  |     |   |         |  |   |   |   |
| 4. Basic material 2: 1.4462, group 10.1  |  |   | 11. Dimension : t2 = 40,0 mm  |     |   |         |  |   |   |   |
| 5. Tested part/area : Welding joint  |  |   | 12. Drawing No. –   |     |   |         |  |   |   |   |
| 13. Purpose of test: Welding procedure qualification record (WPQR) acc. to ČSN EN ISO 15614-1                                    |  |   |   |     |   |         |  |   |   |   |
| 14. Filler material : EN ISO 14343-A: G22 9 3 NL   |  | 15. Weld type : BW (X)  | 16. Welding method : 135  |     |   |         |  |   |   |   |
| 17. Test conditions and results  |  |   |   |     |   |         |  |   |   |   |
| 18. Specimen No.   | 19. Type and dimension [mm]  | 20. Test temperature [°C]   | 21. Impact work KV [J]  |     |   |         | 22. Impact strength [J/cm <sup>2</sup> ] |   |   | 23. Place of failure, fracture appearance |
|  |  |   | 1   | 2   | 3   | average | 1  | 2 | 3 |   |
| 1  | VWT (0/2)  | 20  | 99  | 102 | 101   | 100,6   | —  | — | — | in notch, no defects                      |
| 2  | VHT (1/2)  | 20  | 117   | 122 | 117   | 118,6   | —  | — | — | in notch, no defects                      |
|  |  |   |   |     |   |         |  |   |   |   |
|  |  |   |   |     |   |         |  |   |   |   |
|  |  |   |   |     |   |         |  |   |   |   |
|  |  |   |   |     |   |         |  |   |   |   |
|  |  |   |   |     |   |         |  |   |   |   |
| 24. Notes:<br><br>Specimen according to ČSN EN ISO 9016<br>Test machine VEB WPM Leipzig s.n. 403/40 calibration sheet n. 3063-10 |  |   |   |     |   |         |  |   |   |   |
| 25. Overall assessment / conclusion:   |  |   |   |     |   |         |  |   |   |   |
| 26. <input checked="" type="checkbox"/> Passed   | <i>Test result is satisfactory</i>   |   |   |     |   |         |  |   |   |   |
| 27. <input type="checkbox"/> Failed  |  |   |   |     |   |         |  |   |   |   |
| 28. Tested by : Ing. Petr Kovář  |  | 33. Stamp and signature   |   |     | 34. Inspection organization   |         |  |   |   |   |
| 29. Certificate No. WI-E-042   |  |  |   |     |  |         |  |   |   |   |
| 30. Evaluated by : Ing. Petr Kovář   |  |   |   |     |   |         |  |   |   |   |
| 31. Certificate No. WI-E-042   |  |   |   |     |   |         |  |   |   |   |
| 32. Date of evaluation: 3. 12. 2019  |  |   |   |     |   |         |  |   |   |   |





## Hardness Test Report

according to ČSN EN ISO 9015 - 1

|   |                 |                      |
|---|-----------------|----------------------|
| 1. Customer :<br><b>1. Miroslavská strojírna spol. s r.o.</b><br>Brněnská 523/28<br>671 72 Miroslav | 6. Order No.    | 19 - 101 - 1         |
|   | 7. Report No.   | <b>19 - 478 - HV</b> |
|   | 8. WPS No.      | 08/19                |
| 2. Product : Test specimen - sheet  | 9. WPQR No.     | 3338 - 2019          |
| 3. Basic material 1: 1.4462, group 10.1   | 10. Dimension : | t1 = 40,0 mm         |
| 4. Basic material 2: 1.4462, group 10.1   | 11. Dimension : | t2 = 40,0 mm         |
| 5. Tested part/area : Welding joint   | 12. Drawing No. | —                    |

13. Purpose of test: Welding procedure qualification record (WPQR) acc. to ČSN EN ISO 15614-1

14. Filler material : EN ISO 14343-A: G22 9 3 NL

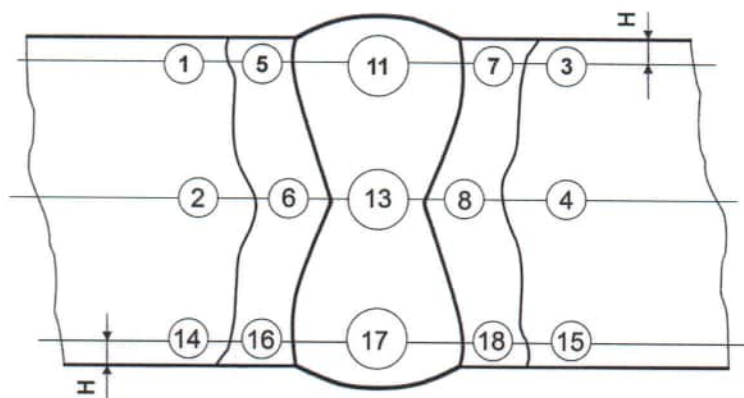
15. Weld type: BW (X)

16. Welding method : 135

## 17. Test conditions and results

18. Device: Hardness Tester Zwick  
ZHV 30 Indentec Ltd

19. Product No. 093895

20. Test Identification (type, load) **HV 10**21. Heat treatment to relieve stress after welding or ageing :  
—

|              |              |                     |              |                     |              |
|--------------|--------------|---------------------|--------------|---------------------|--------------|
| 22. Position | <b>BM 1</b>  | <b>HAZ 5</b>        | <b>WM 11</b> | <b>HAZ 7</b>        | <b>BM 3</b>  |
| 23. Hardness | 276,269,260  | 266,273,277,280,269 | 302,280,279  | 282,270,272,278,269 | 287,272,274  |
| 22. Position | <b>BM 2</b>  | <b>HAZ 6</b>        | <b>WM 13</b> | <b>HAZ 8</b>        | <b>BM 4</b>  |
| 23. Hardness | 301,304,288  | 310,296,318,310,306 | 300,318,302  | 323,299,304,309,312 | 300,298,280  |
| 22. Position | <b>BM 14</b> | <b>HAZ 16</b>       | <b>WM 17</b> | <b>HAZ 18</b>       | <b>BM 15</b> |
| 23. Hardness | 260,264,269  | 265,273,268,272,265 | 287,293,286  | 268,269,270,276,278 | 267,264,263  |
| 22. Position | <b>BM 19</b> | <b>HAZ 21</b>       | <b>WM 22</b> | <b>HAZ 23</b>       | <b>BM 20</b> |
| 23. Hardness | —            | —                   | —            | —                   | —            |

## 24. Overall assessment / conclusion :

25.  Passed**Test result is satisfactory**26.  Failed

27. Tested by : Ing. Petr Kovář

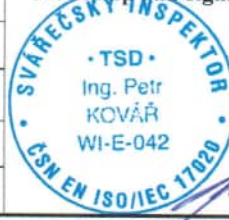
28. Certificate No. WI-E-042

29. Evaluated by : Ing. Petr Kovář

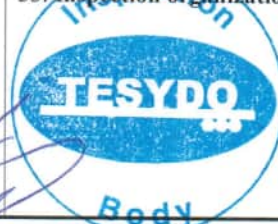
30. Certificate No. WI-E-042

31. Date of evaluation: 3. 12. 2019


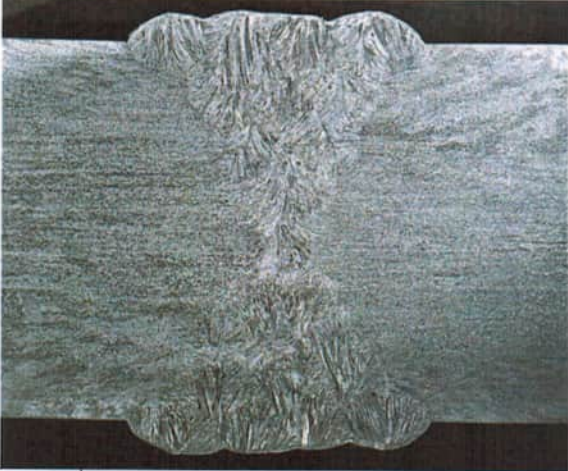


32. Stamp and signature



33. Inspection organization





|  |   |  |                          |
|--|---|--|--------------------------|
|                      | TESYDO, s.r.o. - Testing Laboratory                                       |  | 204-F06                  |
|  | <b>Macroscopic Inspection Report</b><br>according to dle ČSN EN ISO 17639 |  | Revision 1<br>Page 1/1   |
| 1. Customer :<br><b>1. Miroslavská strojírna spol. s r.o.</b><br>Brněnská 523/28<br>671 72 Miroslav  |   | 6. Order No. 19 – 101 – 1<br>7. Report No. 19 – 479 – MA<br>8. WPS No. 08/19   |                          |
| 2. Product : Test specimen – sheet   |   | 9. WPQR No. 3338 – 2019  |                          |
| 3. Basic material 1: 1.4462, group 10.1  |   | 10. Dimension : t1 = 40,0 mm   |                          |
| 4. Basic material 2: 1.4462, group 10.1  |   | 11. Dimension : t2 = 40,0 mm   |                          |
| 5. Tested part/area : Welding joint  |   | 12. Drawing No. –  |                          |
| 13. Purpose of test: Welding procedure qualification record (WPQR) acc. to ČSN EN ISO 15614-1        |   |  |                          |
| 14. Filler material : EN ISO 14343-A: G22 9 3 NL   |   | 15. Weld type: BW (X)  | 16. Welding method : 135 |
| 17. Heat treatment to relieve stress after welding or ageing : —                                     |   |  |                          |
| 18. Location and orientation of test specimens: According to ČSN EN ISO 17639 and ČSN EN ISO 15614-1 |   |  |                          |
| 19. Type of etching agent and etching method: Vilella Bain   |   |  |                          |
| 20. Specimen No. 19 - 101 - 1  |   | 21. Magnification: 1,5 x   | 22. Specimen No. -       |
|  |   |  | 23. Magnification: -     |
|                   |   |  |                          |
| 24. Surface description  | welded - without inadmissible defects                                     | 25. Surface description  | -                        |
| 26. Overall assessment / conclusion:   |   |  |                          |
| 27.  | <input checked="" type="checkbox"/> Passed                                | <b>Test result is satisfactory</b>   |                          |
| 28.  | <input type="checkbox"/> Failed   |  |                          |
| 29. Tested by : Ing. Petr Kovář  |   | 34. Stamp and signature  |                          |
| 30. Certificate No. WI-E-042   |   |                                  |                          |
| 31. Evaluated by: Ing. Petr Kovář  |   |  |                          |
| 32. Certificate No. WI-E-042   |   |  |                          |
| 33. Date of evaluation: 3. 12. 2019  |   | 35. Inspection organization<br> |                          |