

Pendulum impact testing on double bar gate type DG-950 (UDG-37)

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REPORT



TUV NEDERLAND

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| | |
|-------------------|---|
| Client | ISP Intrepid Safety Products BV P. Boumanstraat 37 4583 SH TERHOLE The Netherlands |
| Project | Pendulum impact testing on double bar gate type DG-950 (UDG-37) |
| Conclusion | Tested samples pass the requirements regarding the pendulum impact test as executed. |

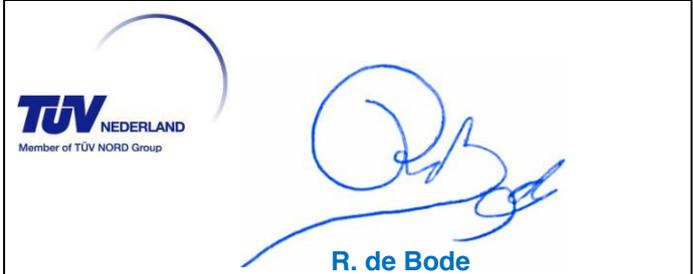
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1 Introduction

ISP Intrepid Safety Products BV has requested TÜV Nederland QA B.V. to witness the testing of a double bar gate on impact behavior.

2 Test specimen

The following test specimen were provided and selected by the assignor. TÜV Nederland QA was not involved in the sampling.

| Test specimen information | |
|---------------------------|---|
| Producer | Intrepid Industries Incorporated (U.S.A.) |
| Description | Gravity closing, Double bar gate |
| Identification | DG-950 (UDG-37) |
| Amount | Thirty one test samples |
| Drawing / more details | See Annex A of this report |

Table 1

3 Test procedure

The test was conducted in accordance with the testing procedure developed on request of the Dutch Government by the Dutch Organization for Applied Physical Research (TNO), as published in report B-92-1143 of April 1994. This test procedure is intended to be applied to building constructions that form part of roofs or partitions at height differences between adjacent floors or between a floor and the adjacent terrain. The test procedure is used to determine whether or not the fixed object can withstand an impact force.

A test specimen is inspected visually, before and after a pendulum impact. A pass or no pass of the test is judged by an evaluation of any permanent defects on the tested construction and its fixation, resulting from the impact test. Forming of cracks and or breakage is allowed, as long as no opening of 100mm by 100mm in the product or its fixation is formed. In case of this specific product, no breakage or deformation through which a person could fall, or any large fragments that come loose as result of the test may occur. In these cases the product is judged as failing the test.

| Overview of test parameters | |
|---|--|
| Test date [dd-mm-yyyy]: | 04-02-2014 |
| Category [steel/aluminium, wood/concrete, other]: | other |
| Weight of the impactor [kg] | 50 ± 2% |
| Content of the impactor | glass pearls, diameter (3 ± 0.5) mm |
| Drop height [mm]: | 1150 |
| Height difference between highest suspension point and impact point (see Annex B for drawing) [mm]: | 2400 |
| Test temperature [°C]: | 10 ± 2 |
| Point of impact | at weakest point (due to the size of the product, one impact point selected instead of 3 points) |
| Number of tested samples: | 30 |

Table 2

Additionally, one test specimen was mounted with a special mounting bracket which allows to mount the product to pipes. Details of this adapter can be found in Annex C.

A schematic overview of the pendulum impact tester as used is attached to this report in Annex B.

4 Results

Table 3 presents the results obtained from of the pendulum impact testing as conducted.

| Test specimen [no.] | Drop height [mm] | Result [pass/ no pass] | Test specimen [no.] | Drop height [mm] | Result [pass/no pass] | Test specimen [no.] | Drop height [mm] | Result [pass/no pass] |
|---------------------|------------------|------------------------|---------------------|------------------|-----------------------|---------------------|------------------|-----------------------|
| 1 | 1150 | pass | 11 | 1150 | pass | 21 | 1150 | pass |
| 2 | 1150 | pass | 12 | 1150 | pass | 22 | 1150 | pass |
| 3 | 1150 | pass | 13 | 1150 | pass | 23 | 1150 | pass |
| 4 | 1150 | pass | 14 | 1150 | pass | 24 | 1150 | pass |
| 5 | 1150 | pass | 15 | 1150 | pass | 25 | 1150 | pass |
| 6 | 1150 | pass | 16 | 1150 | pass | 26 | 1150 | pass |
| 7 | 1150 | pass | 17 | 1150 | pass | 27 | 1150 | pass |
| 8 | 1150 | pass | 18 | 1150 | pass | 28 | 1150 | pass |
| 9 | 1150 | pass | 19 | 1150 | pass | 29 | 1150 | pass |
| 10 | 1150 | pass | 20 | 1150 | pass | 30 | 1150 | pass |

Table 3

Sample number 31 was mounted with a special mounting bracket for pipes and tested under the same conditions. Also this sample passed the test. See Annex C for details.

5 Conclusion

The double bar gate type DG-950 (UDG-37) test specimen as send in by ISP Intrepid Safety Products BV and tested according to the test procedure as developed by the Dutch Organisation for Applied Physical Research (TNO) is judged to fulfill the requirements. This test report applies to the tested specimen.

6 Annex A, test specimen

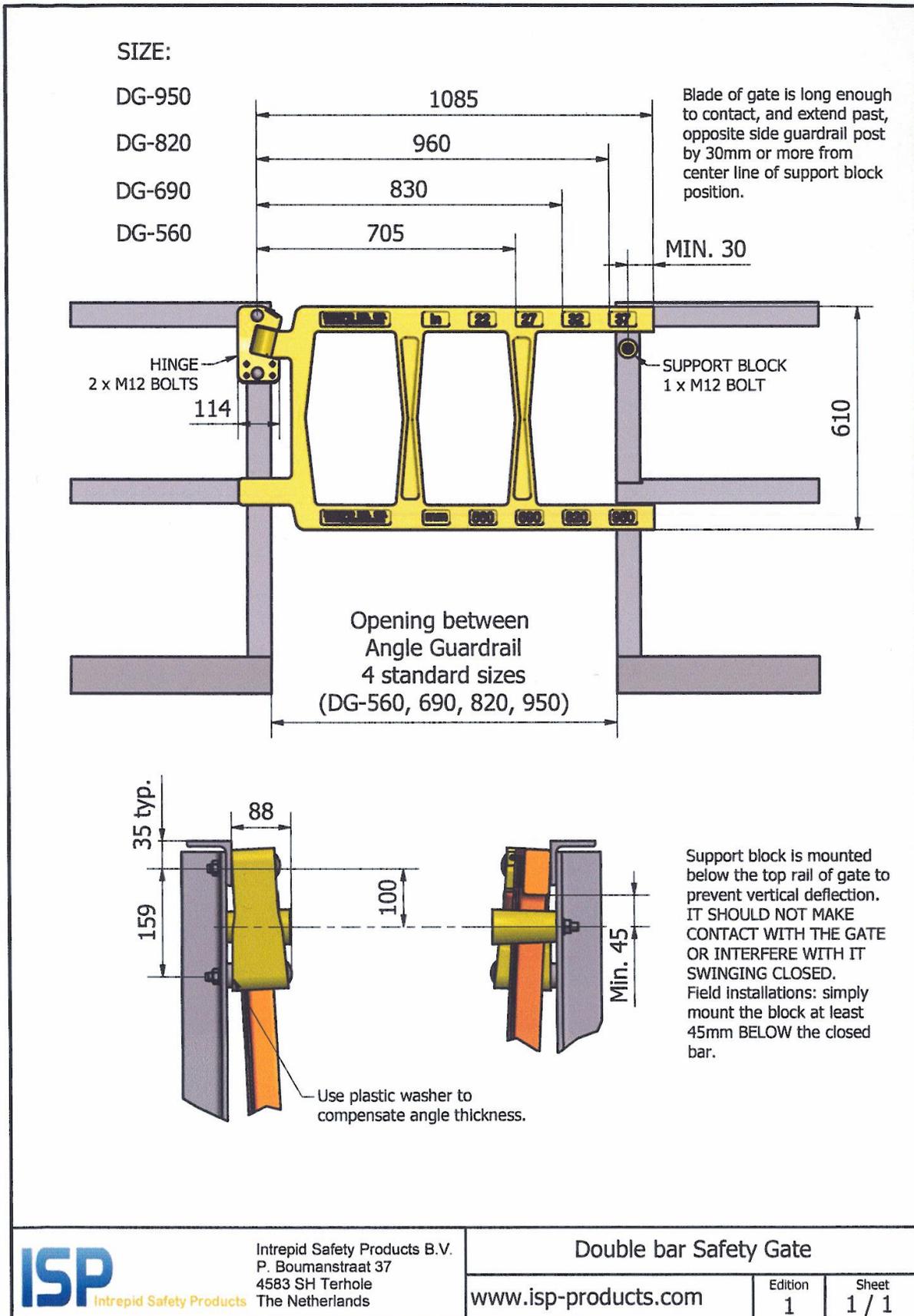


Figure 1, drawing of the double bar gate

7 Annex B, test equipment

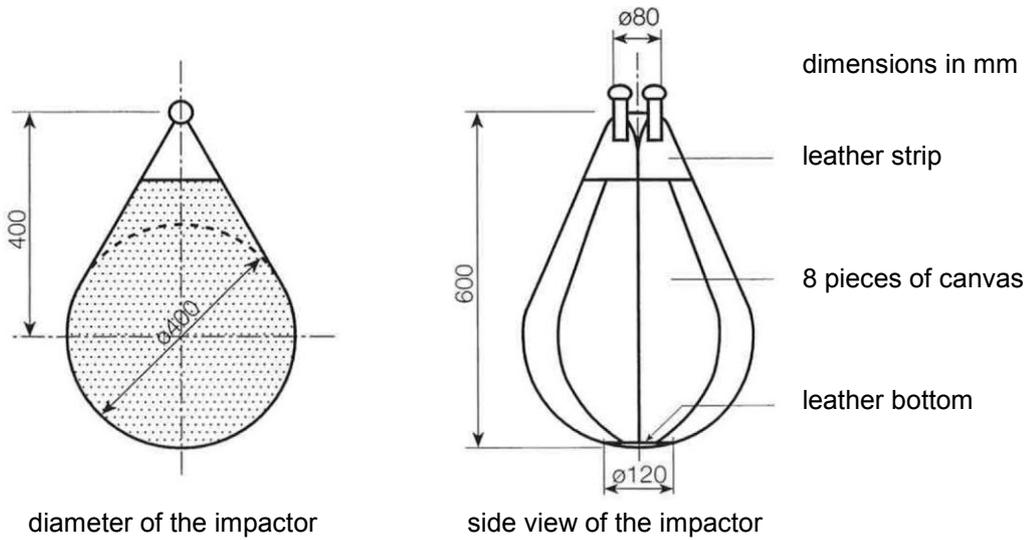


Figure 2, drawings of the impactor

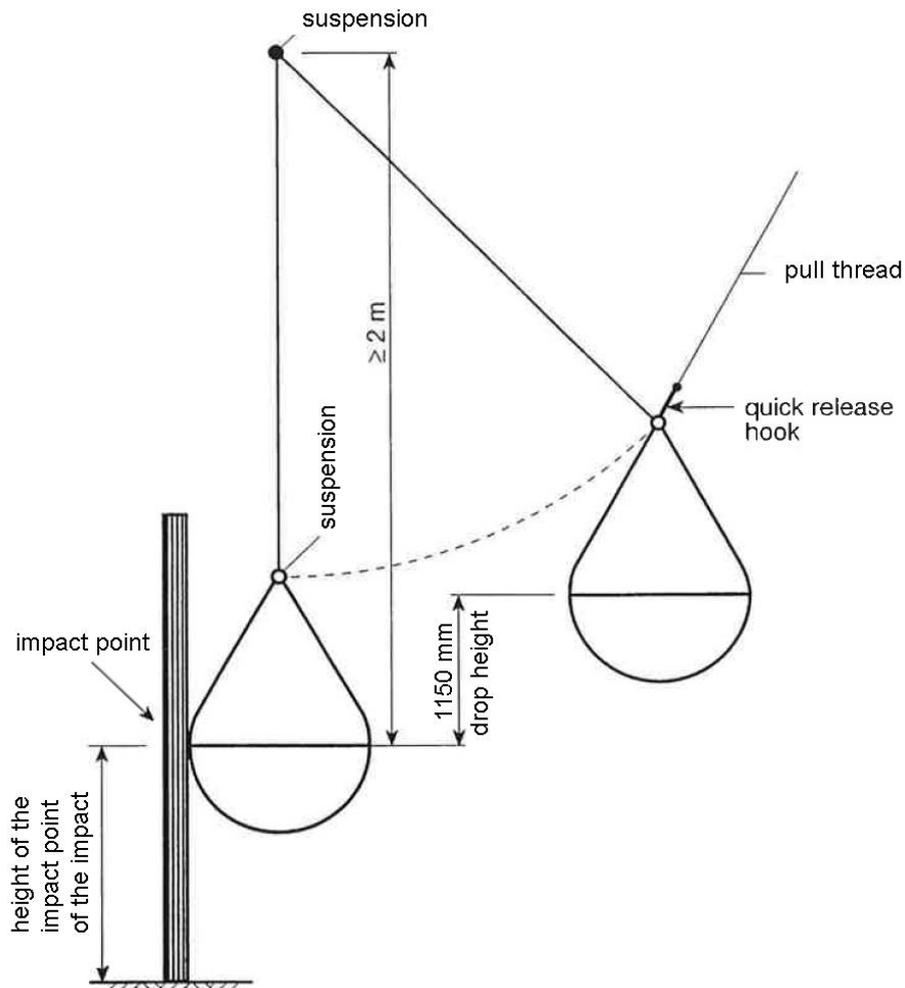


Figure 3, overview of the pendulum impact test

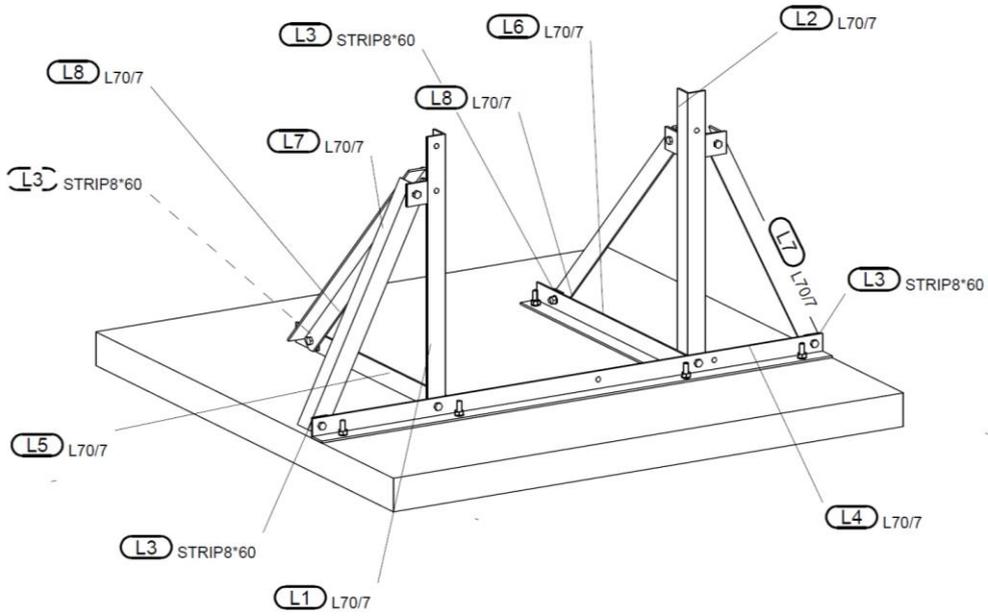


Figure 4, overview of test specimen fixation



Photo 1, overview of impactor, frame, test specimen, measurement of width between L2's (95 cm)

8 Annex C, Adapter for pipes

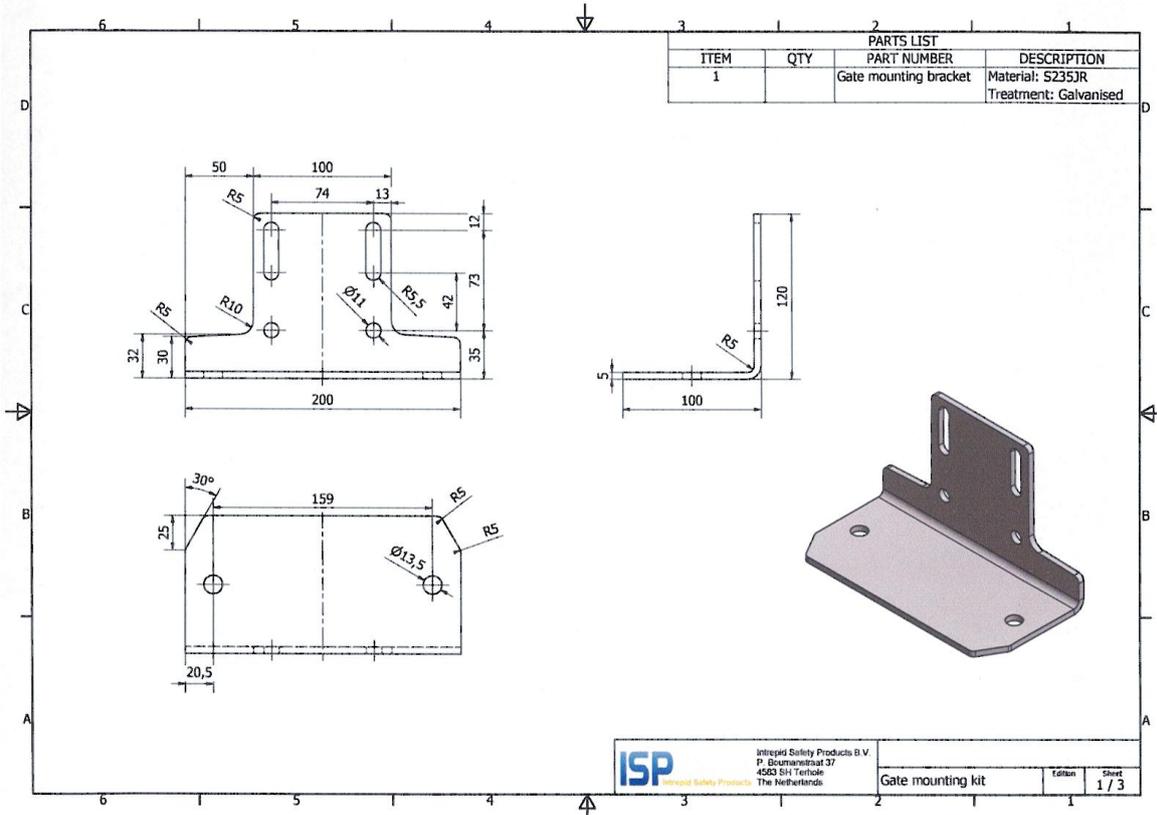
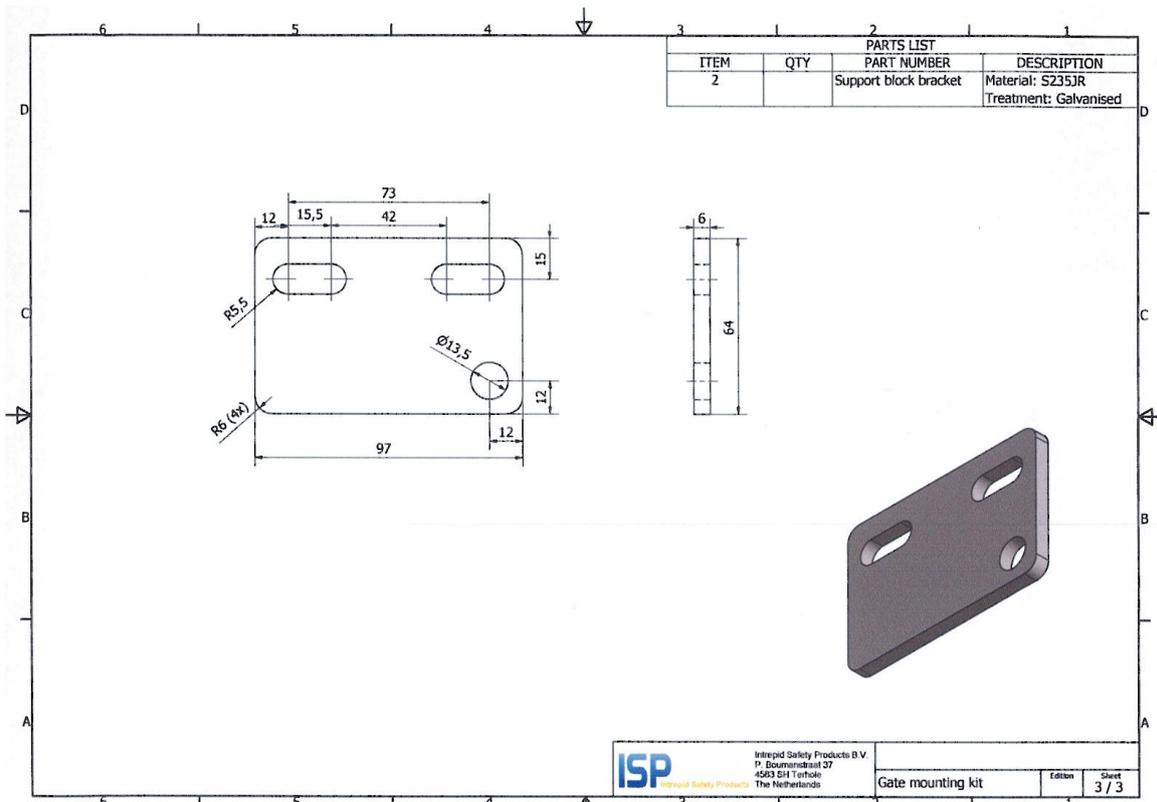
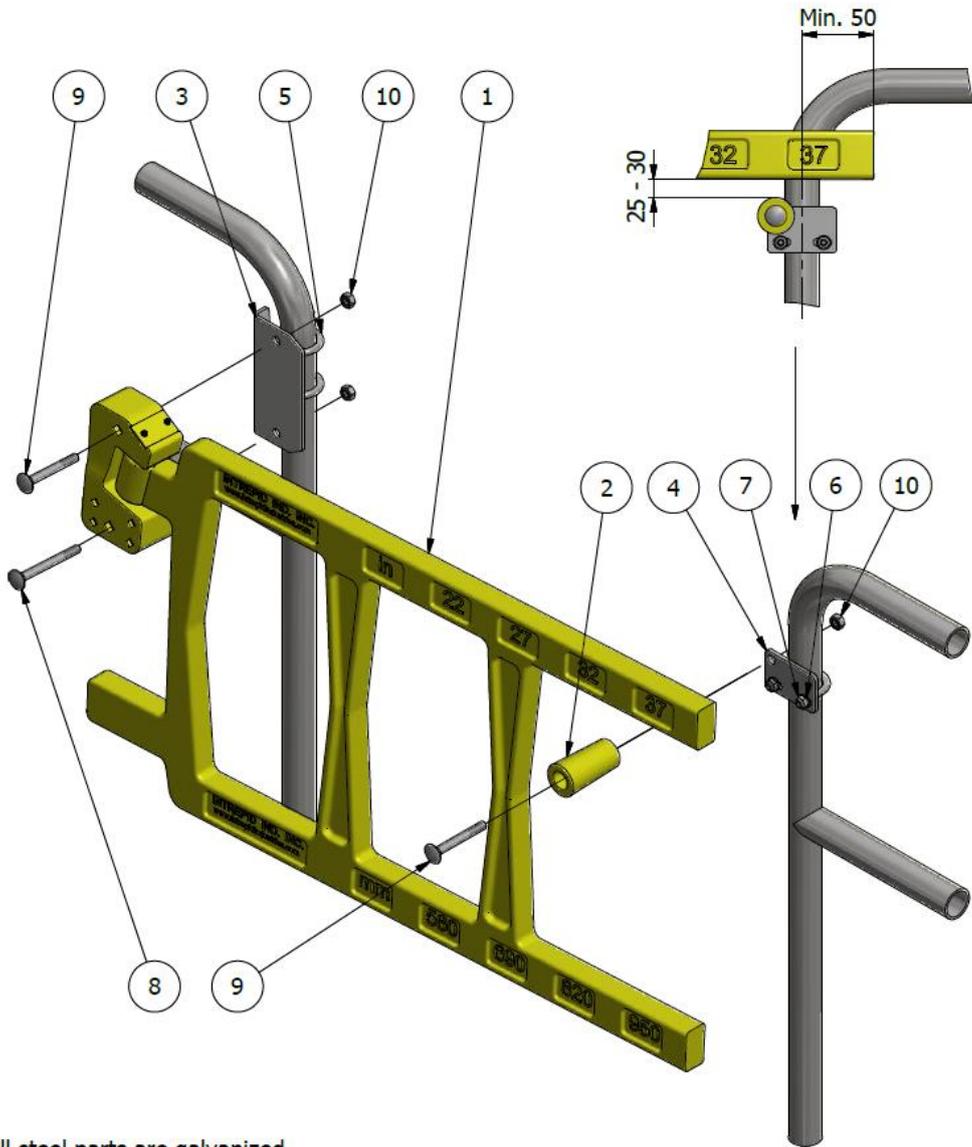


Figure 5 and 6, drawings for adapter of mounting bracket for pipes



All steel parts are galvanized

Figure 7, drawing of the double bar gate on pipe assembly

End of this report.