A picture containing text, sign, stop, clock

Description automatically generated

**Large-Scale Testing Setup (Pipe Preparation)**

**Dated**

**31st March 2023**

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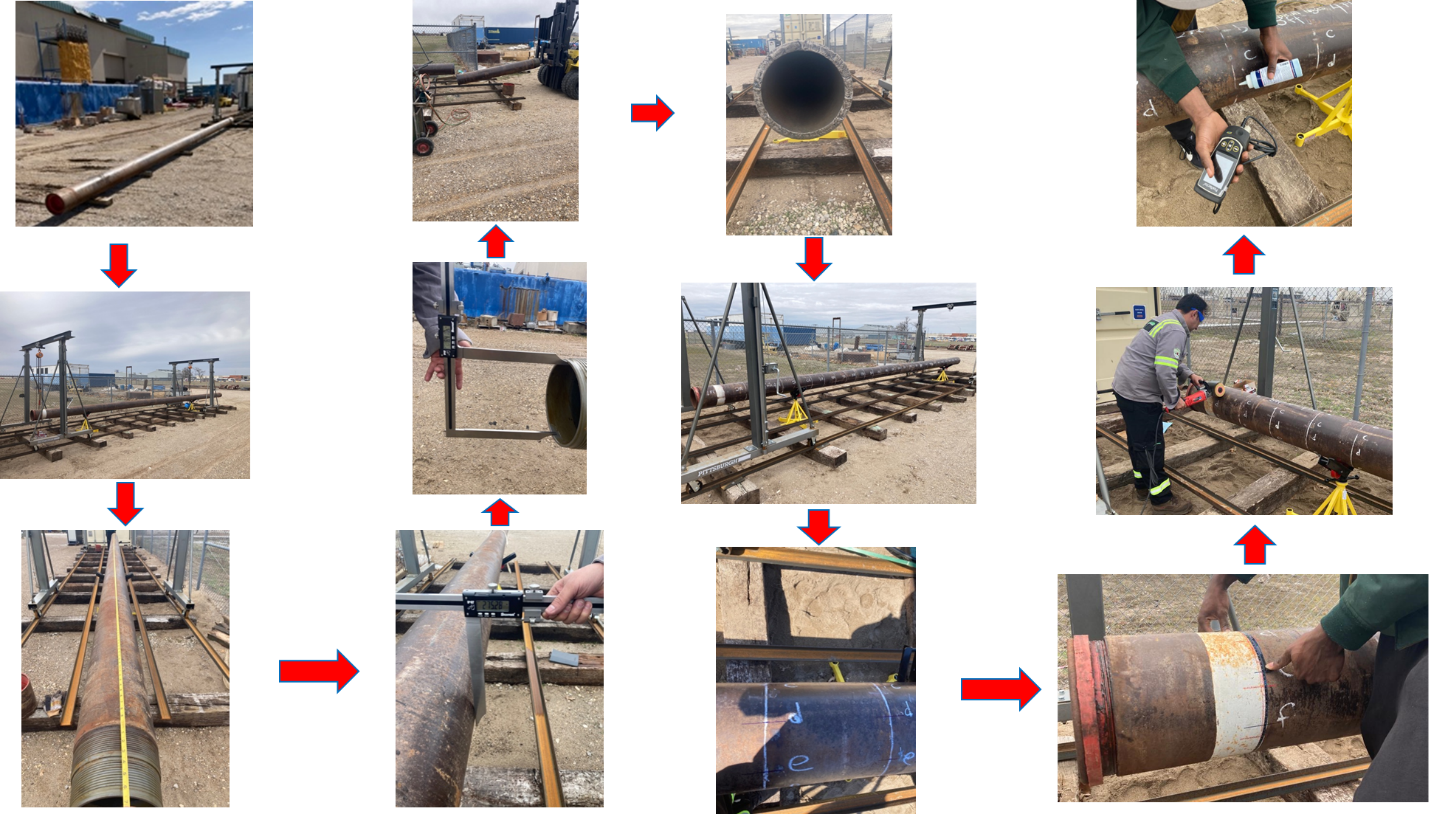
# Preparation of the pipe

Figure 1 and 2 shows the steps taken for the preparation of the 10 ¾” casing for testing. While table 1 to 4 shows the OD and thickness of the given pipe

Diagram

Description automatically generated

**Figure 1: Flow chart for the preparation of the pipe**



**Figure 2: Picture of the steps taken for the preparation of the pipe**

**Table 1: Initial measurement of the pipe**

|  |  |  |
| --- | --- | --- |
| Length (ft) | OD (mm) | ID (mm) |
| 37.57 | 275.28 | 213.76 |

**Table 2: OD measurement with vernier caliper at each point of radial section**

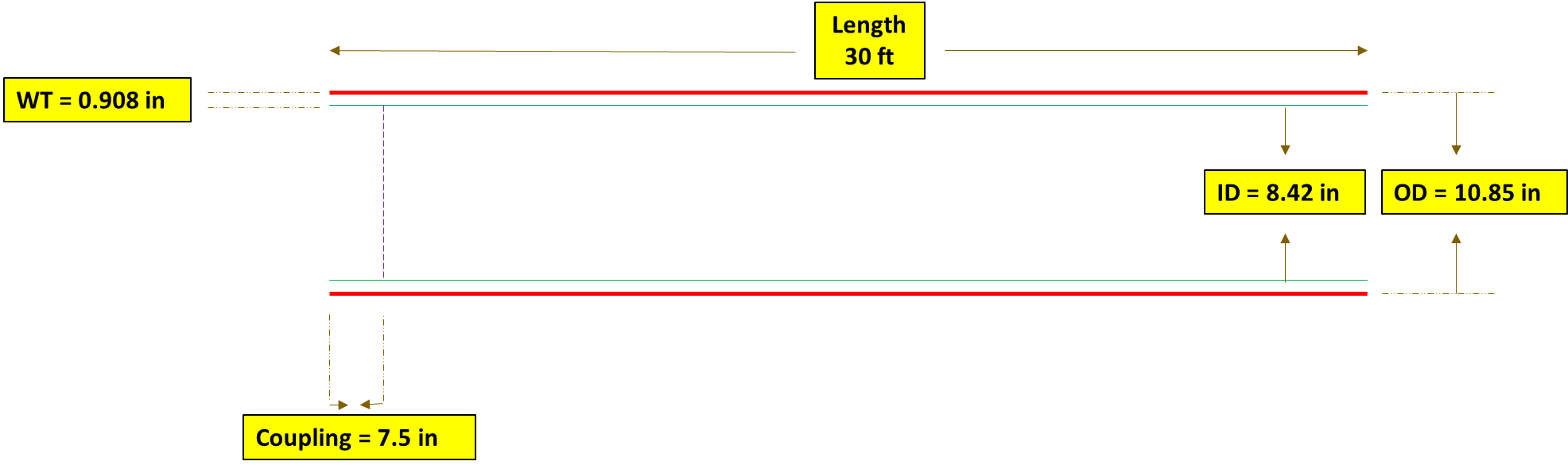
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Section #** | **CALIPER (mm)** | | | | |
| **OD (A-E)** | **OD (B-F)** | **OD (C-G)** | **OD (D-H)** | **AVERAGE (mm)** |
| **1** | 276.20 | 275.86 | 275.94 | 275.92 | **275.98** |
| **2** | 275.93 | 275.57 | 275.52 | 275.62 | **275.66** |
| **3** | 276.05 | 275.60 | 275.49 | 275.70 | **275.71** |
| **4** | 275.97 | 275.78 | 275.64 | 275.60 | **275.75** |
| **5** | 275.97 | 275.85 | 275.50 | 275.51 | **275.71** |
| **6** | 275.92 | 275.95 | 275.50 | 275.42 | **275.70** |
| **7** | 275.89 | 275.88 | 275.46 | 275.41 | **275.66** |
| **8** | 275.80 | 275.91 | 275.71 | 275.48 | **275.73** |
| **9** | 275.82 | 275.92 | 275.41 | 275.56 | **275.68** |
| **10** | 276.14 | 275.97 | 275.33 | 275.45 | **275.72** |
| **11** | 276.14 | 275.90 | 275.33 | 275.48 | **275.71** |
| **12** | 275.77 | 276.00 | 275.69 | 275.73 | **275.80** |
| **13** | 275.88 | 275.60 | 275.48 | 275.57 | **275.63** |
| **14** | 275.87 | 275.76 | 275.35 | 275.50 | **275.62** |
| **15** | 275.90 | 275.98 | 275.18 | 275.35 | **275.60** |
| **16** | 275.64 | 275.93 | 275.60 | 275.16 | **275.58** |
| **17** | 275.59 | 275.58 | 275.38 | 275.51 | **275.52** |
| **18** | 275.60 | 275.56 | 275.33 | 275.19 | **275.42** |
| **19** | 275.93 | 275.90 | 275.25 | 275.40 | **275.62** |
| **20** | 275.63 | 275.89 | 275.38 | 275.17 | **275.52** |
| **21** | 275.61 | 275.48 | 275.21 | 275.22 | **275.38** |
| **22** | 275.78 | 275.93 | 275.51 | 275.12 | **275.59** |
| **23** | 275.75 | 275.89 | 275.20 | 275.31 | **275.54** |
| **24** | 275.39 | 275.67 | 275.46 | 275.07 | **275.40** |
| **25** | 275.63 | 275.55 | 275.49 | 275.07 | **275.44** |
| **26** | 275.26 | 275.50 | 275.27 | 275.18 | **275.30** |
| **27** | 275.75 | 276.00 | 275.06 | 275.15 | **275.49** |
| **28** | 275.47 | 275.40 | 275.31 | 275.20 | **275.35** |
| **29** | 275.71 | 275.88 | 275.26 | 275.43 | **275.57** |
| **30** | 275.71 | 275.63 | 275.27 | 275.31 | **275.48** |

**Table 3: OD measurement with pi tape at each point of radial section**

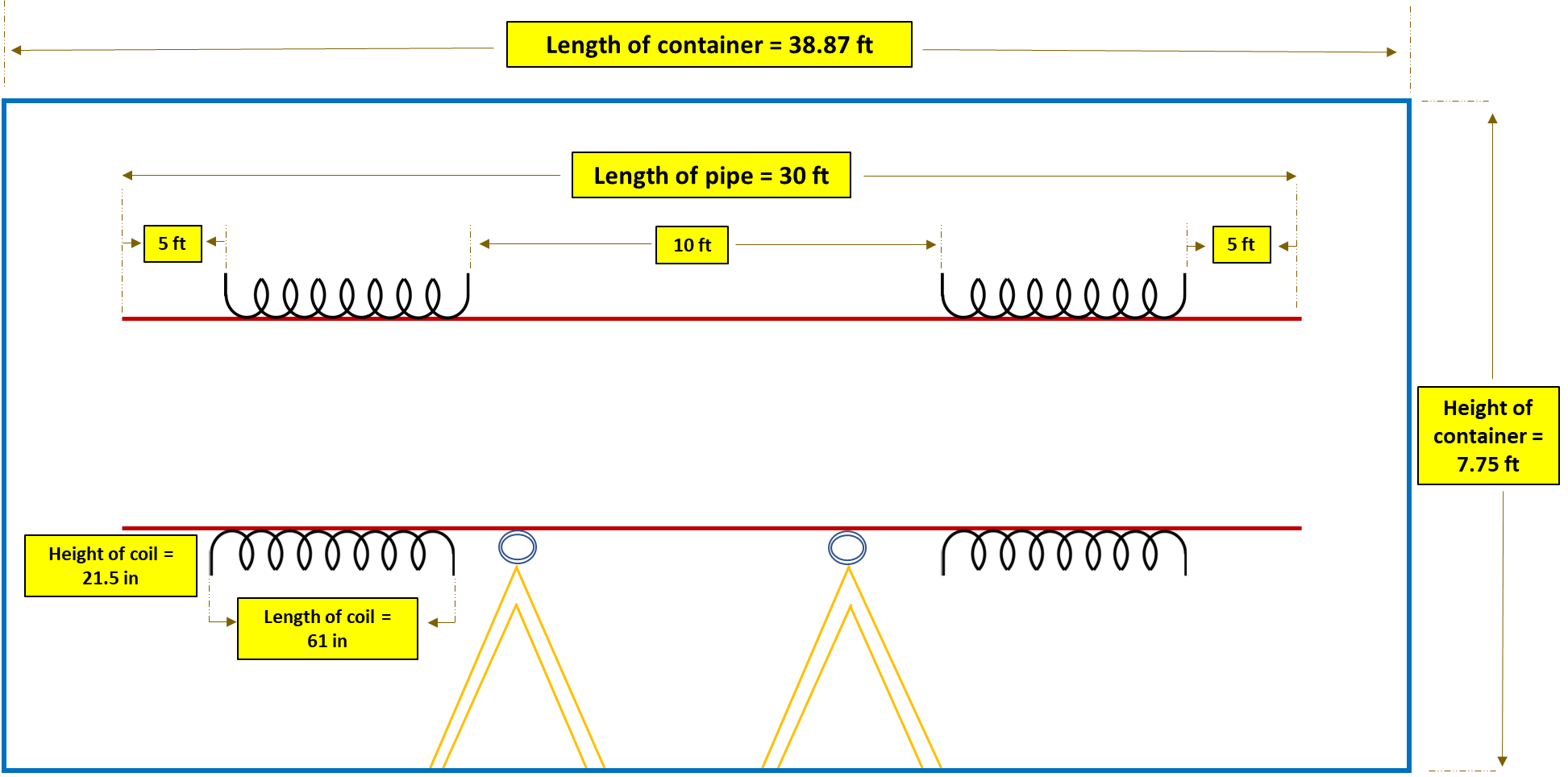
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Section #** | **PI TAPE (mm)** | | | | | | | | |
|  | **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **W. AVERAGE (mm)** |
| **1** | 276.17 | 275.62 | 275.62 | 276.05 | 275.87 | 276.07 | 276.07 | 276.07 | 275.94 |
| **2** | 275.74 | 275.92 | 275.79 | 275.62 | 275.77 | 275.62 | 275.84 | 275.97 | 275.78 |
| **3** | 275.89 | 275.62 | 275.62 | 276.05 | 275.84 | 275.62 | 275.74 | 276.05 | 275.80 |
| **4** | 276.05 | 275.97 | 275.62 | 276.56 | 276.78 | 275.95 | 276.05 | 275.95 | 276.11 |
| **5** | 275.62 | 275.84 | 275.62 | 275.95 | 275.97 | 276.12 | 276.12 | 276.05 | 275.91 |
| **6** | 276.15 | 276.07 | 275.89 | 276.02 | 276.00 | 275.64 | 276.07 | 275.87 | 275.96 |
| **7** | 275.97 | 276.02 | 275.62 | 275.92 | 275.79 | 275.92 | 275.95 | 276.02 | 275.90 |
| **8** | 275.87 | 276.05 | 275.95 | 275.89 | 275.92 | 276.15 | 276.07 | 275.95 | 275.98 |
| **9** | 275.84 | 275.89 | 275.74 | 275.92 | 276.02 | 275.95 | 275.97 | 275.87 | 275.90 |
| **10** | 275.87 | 276.05 | 275.87 | 276.05 | 276.05 | 276.05 | 276.12 | 276.07 | 276.02 |
| **11** | 276.00 | 275.97 | 276.15 | 275.89 | 276.17 | 276.15 | 276.05 | 275.84 | 276.03 |
| **12** | 276.05 | 275.95 | 276.10 | 275.84 | 275.95 | 275.95 | 276.15 | 275.87 | 275.98 |
| **13** | 276.05 | 275.84 | 276.15 | 275.82 | 275.84 | 275.62 | 275.84 | 275.77 | 275.87 |
| **14** | 275.95 | 275.77 | 275.84 | 275.92 | 275.92 | 275.62 | 275.77 | 276.00 | 275.85 |
| **15** | 275.87 | 275.87 | 275.84 | 276.05 | 275.77 | 275.97 | 276.05 | 275.95 | 275.92 |
| **16** | 275.95 | 275.64 | 275.97 | 275.84 | 275.95 | 275.84 | 275.87 | 275.95 | 275.88 |
| **17** | 276.12 | 275.92 | 275.97 | 276.00 | 275.67 | 275.64 | 275.74 | 275.72 | 275.85 |
| **18** | 275.74 | 276.07 | 275.72 | 275.72 | 275.72 | 275.72 | 275.84 | 275.74 | 275.78 |
| **19** | 275.74 | 275.87 | 275.97 | 275.89 | 275.82 | 275.72 | 275.72 | 275.72 | 275.81 |
| **20** | 275.72 | 275.62 | 275.62 | 275.69 | 275.84 | 275.87 | 275.62 | 275.62 | 275.70 |
| **21** | 275.62 | 275.87 | 276.23 | 276.20 | 276.20 | 276.15 | 275.62 | 275.97 | 275.98 |
| **22** | 275.97 | 275.64 | 275.72 | 275.72 | 276.10 | 276.23 | 275.62 | 275.67 | 275.83 |
| **23** | 275.74 | 276.10 | 275.74 | 275.92 | 275.64 | 275.62 | 275.72 | 275.84 | 275.79 |
| **24** | 275.64 | 275.72 | 275.67 | 275.72 | 275.84 | 275.84 | 276.17 | 275.72 | 275.79 |
| **25** | 275.62 | 275.64 | 275.69 | 275.62 | 275.64 | 275.64 | 275.62 | 275.69 | 275.64 |
| **26** | 275.72 | 275.56 | 275.51 | 275.62 | 275.82 | 275.62 | 275.62 | 275.77 | 275.65 |
| **27** | 275.62 | 275.54 | 275.56 | 275.01 | 275.01 | 275.54 | 275.62 | 275.62 | 275.44 |
| **28** | 275.62 | 275.64 | 275.62 | 275.62 | 275.84 | 275.64 | 275.62 | 275.64 | 275.65 |
| **29** | 275.97 | 275.82 | 275.62 | 275.74 | 275.62 | 275.77 | 275.77 | 275.97 | 275.78 |
| **30** | 275.44 | 275.34 | 276.05 | 275.56 | 275.62 | 275.62 | 275.77 | 275.95 | 275.67 |

**Table 4: Wall thickness each point of radial section**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Section #** | **WALLTHICKNESS (mm)** | | | | | | | | | |
|  | **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H** | **W. AVERAGE (mm)** |
| **1** | 23.31 | 23.18 | 23.40 | 23.40 | 23.49 | 23.31 | 23.65 | 23.17 | **23.36** |
| **2** | 23.29 | 23.31 | 23.58 | 23.64 | 23.79 | 23.27 | 23.53 | 23.17 | **23.45** |
| **3** | 23.31 | 23.18 | 23.40 | 23.86 | 23.67 | 23.15 | 23.45 | 22.94 | **23.37** |
| **4** | 23.53 | 23.65 | 23.33 | 23.46 | 23.40 | 23.18 | 23.36 | 23.29 | **23.40** |
| **5** | 23.49 | 23.73 | 23.16 | 23.37 | 23.45 | 23.21 | 23.38 | 23.41 | **23.40** |
| **6** | 23.20 | 23.56 | 23.04 | 23.45 | 23.54 | 23.23 | 23.30 | 23.56 | **23.36** |
| **7** | 22.86 | 23.44 | 23.15 | 23.73 | 23.60 | 23.28 | 23.18 | 23.11 | **23.29** |
| **8** | 23.27 | 23.64 | 23.44 | 23.36 | 23.38 | 23.21 | 22.77 | 23.45 | **23.32** |
| **9** | 23.54 | 24.14 | 23.37 | 23.30 | 23.18 | 23.15 | 22.66 | 23.83 | **23.40** |
| **10** | 23.89 | 23.67 | 22.87 | 23.01 | 23.05 | 23.46 | 23.21 | 24.08 | **23.41** |
| **11** | 23.57 | 23.13 | 22.56 | 22.71 | 22.94 | 23.97 | 23.49 | 24.23 | **23.33** |
| **12** | 23.15 | 22.94 | 22.74 | 23.03 | 23.43 | 23.71 | 23.71 | 24.15 | **23.36** |
| **13** | 23.65 | 22.76 | 22.97 | 23.34 | 23.89 | 23.46 | 23.79 | 23.73 | **23.45** |
| **14** | 23.10 | 22.84 | 23.08 | 23.26 | 23.67 | 23.45 | 23.59 | 23.69 | **23.34** |
| **15** | 22.96 | 22.65 | 23.00 | 23.09 | 23.41 | 23.53 | 23.55 | 23.45 | **23.21** |
| **16** | 23.08 | 22.39 | 22.98 | 23.48 | 23.68 | 23.30 | 23.88 | 23.59 | **23.30** |
| **17** | 22.76 | 22.36 | 22.95 | 23.69 | 23.73 | 23.31 | 23.57 | 22.91 | **23.16** |
| **18** | 22.51 | 22.48 | 23.08 | 23.63 | 23.73 | 23.09 | 23.07 | 22.43 | **23.00** |
| **19** | 22.70 | 22.74 | 23.14 | 23.49 | 23.39 | 22.86 | 22.90 | 22.51 | **22.97** |
| **20** | 22.57 | 22.97 | 22.83 | 23.29 | 23.37 | 22.84 | 22.59 | 22.28 | **22.84** |
| **21** | 22.66 | 22.91 | 22.90 | 23.08 | 23.36 | 22.63 | 23.15 | 22.41 | **22.89** |
| **22** | 22.34 | 22.81 | 23.03 | 23.14 | 23.48 | 22.70 | 22.61 | 22.30 | **22.80** |
| **23** | 22.12 | 22.78 | 22.90 | 23.18 | 23.40 | 22.68 | 22.65 | 22.24 | **22.74** |
| **24** | 22.21 | 22.91 | 23.09 | 22.74 | 23.03 | 22.33 | 22.37 | 22.19 | **22.61** |
| **25** | 22.07 | 22.80 | 22.84 | 22.75 | 22.90 | 22.26 | 22.46 | 22.34 | **22.55** |
| **26** | 22.39 | 22.65 | 22.70 | 22.41 | 22.39 | 22.29 | 22.41 | 22.64 | **22.49** |
| **27** | 22.26 | 22.27 | 22.29 | 22.31 | 22.75 | 22.64 | 22.90 | 22.93 | **22.54** |
| **28** | 22.16 | 22.29 | 22.45 | 22.55 | 22.69 | 23.10 | 22.71 | 22.83 | **22.60** |
| **29** | 22.15 | 22.39 | 22.61 | 23.16 | 22.85 | 22.93 | 22.71 | 22.64 | **22.68** |
| **30** | 22.19 | 22.46 | 22.85 | 23.11 | 23.03 | 22.90 | 22.37 | 22.46 | **22.67** |



**Figure 3: Dimensions of the pipe**



**Figure 4: Schematic of the pipe inside the container**