



**NET4GAS, s.r.o**

**HP PIPELINE DN 1400, NODE  
Kateřinský potok - RU Přimda  
Wall Thickness Calculation**

28/11/2017

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## REVISION HISTORY

000	28/11/17	Approved	Hurnik	Mynarz	Šabata
B01	14/09/17	Issue for Review	Hurnik	Mynarz	Šabata
A01	31/08/17	Issue for IDC	Hurnik	Mynarz	Šabata
Rev.	Date	Issue, Purpose	Prepared	Checked	Approved

## DN1400 PIPELINE WALL THICKNESS CALCULATION - PN 85

Pipeline Wall Thickness Calculation According to ČSN EN 1594 and TPG 702 04:2014

### 1.0 INPUT - DESIGN PARAMETERS

Item	Symbol	Value	Unit
Nominal Pipe Size	NPS	56	inch
Outer Diameter	OD	56.000	inch
Outer Diameter	OD	1422.0	mm
Carbon Steel	CS		
Grade	L485 ME		
Specified Minimum Yield Strength	SMYS	485	MPa
Corrosion Allowance	CA	0.00	mm
Operating Pressure	OP	-	barg
Design Pressure	DP	85.0	barg
Design Pressure	DP	8.50	MPa
Operating Temperature	OT	-	°C
Design Temperature	DT	-	°C
Nominal WT	$t_n$	$t_n > t + A$	
Allowed manufacturing negative tolerance	A	0.50	
Wall thickness	$t = P_i \times OD / (2 \times S \times F \times E \times T)$		
Weld joint factor	E	1	
Temperature derating factor	T	1	

### 2.0 WALL THICKNESS CALCULATION

<b>Calculation of nominal wall thickness according to ČSN EN 1594 and TPG 702 04</b>			
Design factor - pipeline outside station	$F_s$	0.72	
Design factor - pipeline within station	$F_s$	0.60	
Pressure design wall thickness - pipeline outside station		17.31	mm
Pressure design wall thickness - pipeline within station		20.77	mm
<b>Determination of nominal wall thickness - pipeline outside station - category A</b>			
Wall Thickness		17.31	mm
Wall Thickness + CA		17.31	mm
Manufacturing tolerances		0.50	mm
Nominal Wall Thickness (=WT + CA + Tolerance)		17.81	mm
<b>Selected Wall Thickness</b>		<b>18.00</b>	mm
<b>Determination of nominal wall thickness - pipeline within station - category B</b>			
Wall Thickness		20.77	mm
Wall Thickness + CA		20.77	mm
Manufacturing tolerances		0.50	mm
Nominal Wall Thickness (=WT + CA + Tolerance)		21.27	mm
<b>Selected Wall Thickness</b>		<b>21.50</b>	mm