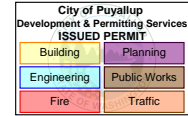


TOLBrace™ Seismic Bracing Calculations

V8.8.118

Project Address: Costco Puyallup Breakroom Mezzani
1201 39TH AVE SW
PUYALLUP, WA 98373
Job # T122062

Contractor: Smith Fire Systems
Address:
Phone:
Licence:



Calculations based on 2016 NFPA Pamphlet #13

Brace Information		TOLCO™ Brace Components		
Maximum Brace Length	<u>7' 0" (2.134 m)</u>	TOLCO™ Component	Listed Load	Adjusted Load
Diameter of Brace	<u>1"</u>	Fig. 1001 Clamp	2015 lbs (914 kg)	1425 lbs (646 kg)
Type of Brace	<u>Sch.40</u>	Fig.980 - 1/2" Universal Swive	2100 lbs (953 kg)	1485 lbs (674 kg)
Angle of Brace	<u>45° Min.</u>	See Fastener Information		
Least Rad. of Gyration	<u>0.42" (11 mm)</u>	*Calculation Based on CONCENTRIC Loading		
L/R Value	<u>200</u>	*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.		
Max Horizontal Load	<u>1310 lbs (594 kg)</u>	Seismic Brace Assembly Detail		
Fastener Information				
Orientation to Connecting Surface	<u>NFPA Type B</u>	Brace Identification on Plans Brace 1A		
Fastener Type	<u>1/2in. Unfinished Steel Bolt</u>	Brace Type Lateral [X] Longitudinal [] 4-Way []		
Diameter	<u>1/2in.</u>			
Length	<u>N/A</u>			
Maximum Load	<u>2050 lbs (930 kg)</u>			
Prying Factor	<u>N/A</u>			

Sprinkler System Load Calculation (Fpw = CpWp)

Cp = 0.5968

Diameter	Type	Length	Total Length	Weight Per Unit Length	Total Weight
3" (80 mm)	Sch. 40	20 ft (6.1 m)	20 ft (6.1 m)	10.82 lb/ft (16.1 kg/m)	216 lbs (98 kg)
Subtotal Weight					216 lbs (98 kg)
Wp (incl. 15%)					248 lbs (113 kg)
Main Size	Type/Sch.	Spacing (ft)	Total (Fpw)		148 lbs (67 kg)
3"	Sch. 40	20	Maximum Fpw per 9.3.5.5.2 (if applicable)		1597 lb (724 kg)

TOLBrace™ Seismic Calculations

Costco Puyallup Breakroom Mezzanine
1201 39TH AVE SW

Job # TI22062



Brace Identification	Brace 1A
Brace Type (Per NFPA#13)	NFPA Type B
Braced Pipe (ft)	3" Sch.40 Steel Pipe
Spacing of Brace	20' 0" (6.1 m)
Orientation of Brace	Lateral
Bracing Material	1" Sch.40
Maximum Brace Length	7' 0" (2.13 m)
Slenderness Ratio used for Load Calculation	200
True Angle of Brace for Calculation	45°
Type of Fastener	1/2in. Unfinished Steel Bolt
Length of Fastener	N/A

Summary of Pipe within Zone of Influence

3" Sch.40 Steel Pipe (76.2 mm)	20 ft (6.1 m)

G-Factor Used 0.5968

Allowance for Heads and Fittings 15%

Conclusions

Total Adjusted Load of Pipe in Zone of Influence	149 lbs (68 kg)
Material Capacity	1310 lbs (594 kg)
Fastener Capacity	4519 lbs (2050 kg)
Fig. 1001 Clamp	1425 lbs (646 kg)
Fig.980 - 1/2" Universal Swivel	1485 lbs (674 kg)
Structural Member	Steel Column

Calculations prepared by Israel Perez-Tanahast

* The description of the Structural Member is for informational purposes only.
TOLBrace™ software calculates the brace assembly only, not the structure it is attached to.
Calculated with TOLBrace™ 8
Visit us at www.tolco.com

TOLBrace™ Seismic Bracing Calculations

V8.8.118

Project Address: Costco Puyallup Breakroom Mezzani
1201 39TH AVE SW
PUYALLUP, WA 98373
Job # TI22062

Contractor: Smith Fire Systems
Address:
Phone:
Licence:



Calculations based on 2016 NFPA Pamphlet #13

Brace Information		TOLCO™ Brace Components		
Maximum Brace Length	<u>7' 0" (2.134 m)</u>	TOLCO™ Component	Listed Load	Adjusted Load
Diameter of Brace	<u>1"</u>	Fig. 4L Clamp	2015 lbs (914 kg)	1425 lbs (646 kg)
Type of Brace	<u>Sch.40</u>	Fig.980 - 1/2" Universal Swive	2100 lbs (953 kg)	1485 lbs (674 kg)
Angle of Brace	<u>45° Min.</u>	See Fastener Information		
Least Rad. of Gyration	<u>0.42" (11 mm)</u>	*Calculation Based on CONCENTRIC Loading		
L/R Value	<u>200</u>	*Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.		
Max Horizontal Load	<u>1310 lbs (594 kg)</u>			
Seismic Brace Assembly Detail				
Fastener Information		Brace Identification on Plans <u>Brace 1B</u>		
Orientation to Connecting Surface	<u>NFPA Type B</u>	Brace Type Lateral [] Longitudinal [X] 4-Way []		
Fastener Type	<u>1/2in. Unfinished Steel Bolt</u>			
Diameter	<u>1/2in.</u>			
Length	<u>N/A</u>			
Maximum Load	<u>2050 lbs (930 kg)</u>			
Prying Factor	<u>N/A</u>			

Sprinkler System Load Calculation (Fpw = CpWp)					
Cp = <u>0.5968</u>					
Diameter	Type	Length	Total Length	Weight Per Unit Length	Total Weight
3" (80 mm)	Sch. 40	20 ft (6.1 m)	20 ft (6.1 m)	10.82 lb/ft (16.1 kg/m)	216 lbs (98 kg)
				Subtotal Weight	216 lbs (98 kg)
				Wp (incl. 15%)	248 lbs (113 kg)
Main Size 3"	Type/Sch. Sch. 40	Spacing (ft) 20	Total (Fpw)		148 lbs (67 kg)
Maximum Fpw per 9.3.5.5.2 (if applicable)					N/A

TOLBrace™ Seismic Calculations

Costco Puyallup Breakroom Mezzanine
1201 39TH AVE SW

Job # TI22062



Brace Identification	Brace 1B
Brace Type (Per NFPA#13)	NFPA Type B
Braced Pipe (ft)	3" Sch.40 Steel Pipe
Spacing of Brace	20' 0" (6.1 m)
Orientation of Brace	Longitudinal
Bracing Material	1" Sch.40
Maximum Brace Length	7' 0" (2.13 m)
Slenderness Ratio used for Load Calculation	200
True Angle of Brace for Calculation	45°
Type of Fastener	1/2in. Unfinished Steel Bolt
Length of Fastener	N/A

Summary of Pipe within Zone of Influence

3" Sch.40 Steel Pipe (76.2 mm)	20 ft (6.1 m)

G-Factor Used 0.5968

Allowance for Heads and Fittings 15%

Conclusions

Total Adjusted Load of Pipe in Zone of Influence	149 lbs (68 kg)
Material Capacity	1310 lbs (594 kg)
Fastener Capacity	4519 lbs (2050 kg)
Fig. 4L Clamp	1425 lbs (646 kg)
Fig.980 - 1/2" Universal Swivel	1485 lbs (674 kg)
Structural Member	Steel Column

Calculations prepared by Israel Perez-Tanahast

* The description of the Structural Member is for informational purposes only.
TOLBrace™ software calculates the brace assembly only, not the structure it is attached to.
Calculated with TOLBrace™ 8
Visit us at www.tolco.com