FurnXpert Heat Loss Software – Insulation Design Module



## Specialisis in Thermal Applications

www.furnxpert.com



FurnXpert Refractory Heat Loss software offers the ability to run Heat Loss calculations through multiple layers of refractory. The results constitute temperature profile from the hot surface to the cold surface, Junction Temperatures, Heat Flux and Heat Storage. The analysis can be performed on a straight or curved surfaces. Transient analysis to determine temperature rise with time can also be performed with the Transient module.

We have come up with a new module *FurnXpert Insulation Design* which extends the software to perform insulation design for various applications. The design criteria takes into account safe outside skin temperatures, target heat flow rate, energy savings, and economics.



The presentation is prepared to demonstrate the capabilities and features of Insulation Design Software. The slide indexing are as follows

- Slide 4 6 The over view of the original software
- Slide 7 The over view of the new module
- Slide 8 9 Cases for Target Outside Temperature Criteria 1.
- Slide 10 11 Cases for Target Heat Flow Rate Criteria 2.
- Slide 12 Case for Fuel Costs and Savings Criteria 3.

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Unit System Metric Watt ~ Select Unit Accuracy High ~	t System – Only before creating a new Analysis
Gas Convection on Hot Side SETUP FURNAC Check this to enable Gas Convection On Hot Side ULA NAC ULA NAC CompAS Controls, Inc. P O Box 61825 Sunnyvale, CA 94085 Ph: (724) 388-0577 info@furnxpert.com www.furnxpert.com Were Lice	T E       of SETTING UP and         SIMULATING       industrial furnaces.         The software has       been developed to         aid process       engineers and         furnace operators       configure their         furnaces, select       parts, and run what-         if analysis to       determine the best         furnace operating       parameters.         Cosystems CompAS Controls,       two body furnaces, written
ANALYSIS # CUSTOMER	EQUIPMENT
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Surface Name       Wall         Porous Gas       Air         Surface Orientation       Vertical	Refractory List     Manufacturer     Product Class     Max Lim     D       1     B & W SR 99 (3300F)     B & W     Firebrick     1815     30       2     B & W 80     B & W     Firebrick     1538     22
Hot Side Temp     1315     °C     Surface Type       Ambient Temp     32     °C     °C       Inside Radius     1100     mm       Surface Area     m²	Curved and Straight wall can be analyzed in the same form just by changing selection
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2 3 4 Select 4 Select Select Select Select Select	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
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Case	Insulation thickness [in]	Surface Temperature [°F]	Heat Flow [btu/hr/ft²]	Efficiency [ % ]	Cost [\$/ft²/yr]	Savings [\$/ft²/yr]		
83	20.500	130	129	96	-	-		
84	20.750	130	128	96	-	-		
85	21.000	129	1	Target Read	ched -	-		
86	21.250	129	1111111			-		
87	21.500	129	126	96	-	-		
89	22.000	128	125	96	-	-		
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File Edit Tools Help         Criteria 3: Yearly Cost and Savings         Insulation Layers Selection.         Design Create       Property Date       Insulation Layers Selection.         Design Create       Taget Heat Loss       but/Rth/rr       Insulation Layers Selection.         Taget Design Temp Heat Cost       5       V       Select Fuel Type       Toget Heat Loss       but/Rth       Cold Sde Info       Base Material Info       Select         Number of Cases       O       Cold Sde Info       Cold Sde Info       Select         Base Material Info       Select         Select Curved       9       Cold Sde Info       Select <th>😥 F U</th> <th>URNXPERT HEATLOSS SOFTWARE 2023</th> <th></th> <th>- 0</th>	😥 F U	URNXPERT HEATLOSS SOFTWARE 2023		- 0
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Select Fuel Type       Nateral area       Select fuel Type       Nateral area       Advertal area       Advertal area       Advertal area       Select         Select Fuel Type       Ing Efficiency       60       Hot Side & Ambient Temp       Ing Efficiency       Select       3       V       Select         Hot Side Temp       900       T       Cold Side Info       Ar Velocity       Select       Select       Select       Select       V       Select       Select         Number of Cases       20       Image finder       Ing Efficiency       Image finder       Select	i 🗈 :	😂 🛃 🥔 💷 📜 Crite	eria 3: Yearly Cost and Savings	
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3         0.250         293         692         77         45         149				
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