UNIT ENVELOPE HEAT LOSS/GAIN CALCULATIONS
MODEL: AMTEX N6484 near Dallas, TX
PER ASHRAE 90.1-89

BUILDING LENGTH	BUILDING WIDTH	CEILING HEIGHT
80 FT	62.667 FT	9 FT

WINDOW SIZE: (A)	24 IN. WIDE BY	52 IN. HIGH	
NO. OF WINDOWS: (A)	22 WITH INSULATING GLAZING		
WINDOW SIZE: (B)	36 IN. WIDE BY	52 IN. HIGH	
NO. OF WINDOWS: (B)	0 WITH INSULATING GLAZING		
WINDOW SIZE: (C)	24 IN. WIDE BY	60 IN. HIGH	
NO. OF WINDOWS: (C)	0 WITH INSULATING GLAZING		
WINDOW SIZE: (D)	40 IN. WIDE BY	80 IN. HIGH	
NO. OF WINDOWS: (D)	0 WITH INSULATING GLAZING		
HOLLOW METAL DOORS	36 IN. WIDE BY	80 IN. HIGH	
GLASS DOOR	36 IN. WIDE BY	84 IN. HIGH	
QTY OF H M DOORS=	0	QTY OF GLASS DOORS=	4

DESIGN CONDITIONS

ANNUAL HEATING DEGREE DAYS =	2363
INSIDE WINTER DESIGN TEMPERATURE	68
OUTSIDE WINTER DESIGN TEMPERATURE	22
INSIDE SUMMER DESIGN TEMPERATURE	78
OUTSIDE SUMMER DRY BULB TEMPERATURE	100
OUTSIDE SUMMER WET BULB TEMPERATURE	78

ENERGY EFFICIENCY REQUIREMENTS

WALLS	(Uo WALL) =	0.240
ROOF/CEILING	(Uo ROOF/CEILING)=	0.058
FLOOR	(Uo FLOOR) =	0.110

U-FACTOR CALCULATIONS

ROOF/CEILING	R @ CAVITY		R @ RAFTER
OUTSIDE AIRFILM	0.17		0.17
.045 EPDM ROOFING	0.00		0.00
7/16" OSB SHEATHING	0.66		0.66
ROOF OR CEILING INSULATION	19.00		-----
2x8 RAFTER FRAMING	-----		9.38
1/2" SUSP. CEILING MTL	0.45		0.45
INSIDE AIRFILM	0.68		0.68
R TOTAL FOR ROOF/CLG AREAS=	20.96		11.34
NET R VALUE FOR CEILING =		20.3588	
U VALUE = 1/R =		0.0491	

UNIT ENVELOPE HEAT LOSS/GAIN CALCULATIONS
MODEL: AMTEX N6484 near Dallas, TX
LOCATED IN THE STATE OF TX

WALL	R @ CAVITY	R @ STUD
OUTSIDE AIRFILM	0.17	0.17
7/16 OSB SHEATHING	0.66	0.66
WALL INSULATION	11.00	-----
2x4 STUD	-----	4.38
5/8" GYPSUM WALLBOARD	0.56	0.56
INSIDE AIRFILM	0.68	0.68
R TOTAL FOR WALLS =	13.07	6.445
NET R VALUE FOR WALLS =	12.4489	
U VALUE = 1/R =	0.080328	

FLOOR	R @ CAVITY	R @ JOIST
INSIDE AIRFILM	0.68	0.68
VINYL TILE	0.05	0.05
3/4" PLYWOOD DECKING	0.93	0.93
INSULATION BATT	11.00	-----
2x8 FLOOR JOIST	-----	9.38
BOTTOM BOARD	0.12	0.12
OUTSIDE AIRFILM	0.17	0.17
R TOTAL FOR FLOOR =	12.95	11.33
NET R VALUE FOR FLOOR =	12.7981	
U VALUE = 1/R =	0.078136	

AREA SUMMARY

TOTAL WALL CAVITY AREA:	2052.589
TOTAL WALL FRAMING AREA:	240.7506
TOTAL WINDOW AREA:	190.6667
TOTAL METAL DOOR AREA:	0
TOTAL GLASS DOOR AREA:	84
TOTAL FLOOR CAVITY AREA:	4543.358
TOTAL FLOOR FRAMING AREA:	470.0025
TOTAL CEILING CAVITY AREA:	4543.358
TOTAL CEILING FRAMING AREA:	470.0025
THE PERCENT OF OPENINGS IS:	10.70%

COMBINED GROSS WALL THERMAL TRANSMITTANCE VALUE CALCULATIONS

WALL COMPONENT	AREA	RESIST	A/R
WINDOWS	190.667	1.49	127.96
HOLLOW METAL DOORS	0	4.16	0.00
GLASS DOORS	84	1.72	48.84
WALL CAVITY	2052.59	13.07	157.05
WALL FRAMING	240.751	6.445	37.35
TOTALS:	2568.01		371.2019
U(WALL) = (A/R) / A =	0.14455 BTU/h/DE		* MEETS CODE

Texas Industrialized Building Code Council
SBC ____ UBC ✓ IOTFDC ____

NOV 2 0 2001

Approved
PFS Corp.
IHDRA 7

UNIT ENVELOPE HEAT LOSS/GAIN CALCULATIONS
MODEL: AMTEX N6484 near Dallas, TX
LOCATED IN THE STATE OF TX

COMBINED ROOF/CEILING THERMAL TRANSMITTANCE VALUE CALCULATIONS

ROOF/CLG COMPONENT	AREA	RESIST	A/R
ROOF/CLG CAVITY	4543.36	20.96	216.76
ROOF/CLG FRAMING	470.003	11.34	41.45
TOTALS:	5013.36		258.2097
U(ROOF) = (A/R) / A =	0.0515	BTU/h/DE	* MEETS CODE

COMBINED GROSS FLOOR THERMAL TRANSMITTANCE VALUE CALCULATIONS

FLOOR COMPONENT	AREA	RESIST	A/R
FLOOR CAVITY	4543.36	12.95	350.84
FLOOR FRAMING	470.003	11.33	41.48
TOTALS:	5013.36		392.3214
U(FLOOR) = (A/R) / A =	0.07826	BTU/h/DE	* MEETS CODE

TOTAL ENVELOPE CONFORMANCE

	GROSS AREA	ACTUAL A/R	Uo LIMIT	A X Uo
WALL	2568.01	371.20	0.240	616.32
ROOF/CEILING	5013.36	258.21	0.058	290.77
FLOOR	5013.36	392.32	0.110	551.47
GRAND TOTAL =	12595	1021.73 (1)		1458.566 (2)
OVERALL ENVELOPE Uo	0.08112		** MEETS CODE **	

IF THE GRAND TOTAL (1) OF THE WALL, ROOF/CEILING AND FLOOR A/R VALUES IS EQUAL TO OR LESS THAN, THE TOTAL (2) OF THE A x Uo CODE LIMITS FOR THE WALL, ROOF/CEILING AND FLOOR, THE TOTAL ENVELOPE MEETS THE CODE, EVEN THOUGH INDIVIDUALLY THE WALL, ROOF/CEILING OR FLOOR MAY NOT.

IF THE TOTAL ENVELOPE CALCULATION INDICATES THAT THE DESIRED CONSTRUCTION DOES NOT MEET CODE REQUIREMENTS, MAKE CHANGES IN THE STRUCTURE TO ADD INSULATION, REDUCE GLASS AREAS OR USE INSULATING GLASS AS REQUIRED TO MEET THE CODE REQUIREMENTS.

Texas Industrialized Building Code Council
SBC ____ UBC ✓ IOTFDC ____

NOV 2 0 2001

Approved
PFS Corp.
IHDRA 7

UNIT ENVELOPE HEAT LOSS/GAIN CALCULATIONS
MODEL: AMTEX N6484 near Dallas, TX
LOCATED IN THE STATE OF TX

TOTAL ENVELOPE HEAT LOSS CALCULATIONS

ITEM	AREA	U-VALUE	DESIGNTEMP	HEAT LOSS MBTU/H
FLOOR	5013.36	0.0781	46	18.0194
WALLS	2568.01	0.0803	46	9.4890
ROOF	5013.36	0.0491	46	11.3275
WINDOWS	190.667	0.5800	46	5.0870
METAL DOORS	0	0.2404	46	0.0000
GLASS DOORS	84	0.5814	46	2.2465
VENTILATION (CFM)	552.5	0.0180	46	54.8964
INFILTRATION	285.334	0.7000	46	18.3755
		TOTAL HEAT LOSS		119.4414 MBTU

THIS IS EQUIVALENT TO 34.638 KW OF ELECTRIC HEAT REQUIRED IF RESISTANCE HEAT ALONE IS PROVIDED. IF A HEAT PUMP UNIT IS USED, THE TOTAL HEATING CAPACITY OF THE UNIT MUST BE CONSIDERED.

TOTAL ENVELOPE HEAT GAIN CALCULATIONS

ITEM		AREA	U-VALUE	DESIGNTEMP	HEAT GAIN MBTU/H
FLOOR		5013.36	0.0781	22	8.6180
WALLS		2568.01	0.0803	22	4.5382
ROOF		5013.36	0.0491	22	5.4175
WINDOWS		190.667	0.5800	22	2.4329
METAL DOORS		0	0.2404	22	0.0000
GLASS DOORS		84	0.5814	22	1.0744
SUNLIGHT THRU GLASS		274.667	2.02702	22	12.2486
LIGHTING		5013.36	2	W/SF	34.2112
OCCUPANCY	20sf/OCU	221		PEOPLE	50.8300
APPLIANCES		5013.36	1	W/SF	17.1056
DUCT LOSS				22	
VENTILATION (CFM)		1105	0.0180	22	26.2548
INFILTRATION		285.334	0.7000	22	8.7883
			TOTAL HEAT GAIN		171.5195 MBTU

TOTAL TONS OF COOLING REQUIRED = 14.29329

SQ. FEET OF FLOOR AREA PER TON = 350.7491

Texas Industrialized Building Code Council
SBC ____ UBC ✓ IOTFDC ____

NOV 2 0 2001

Approved
PFS Corp.
IHDRA 7