

Capsule N Intermediate Shell Forging C (Tangential)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/23/2021 5:48 AM

A = 50.00 B = 50.00 C = 62.93 T0 = 168.14 D = 0.00

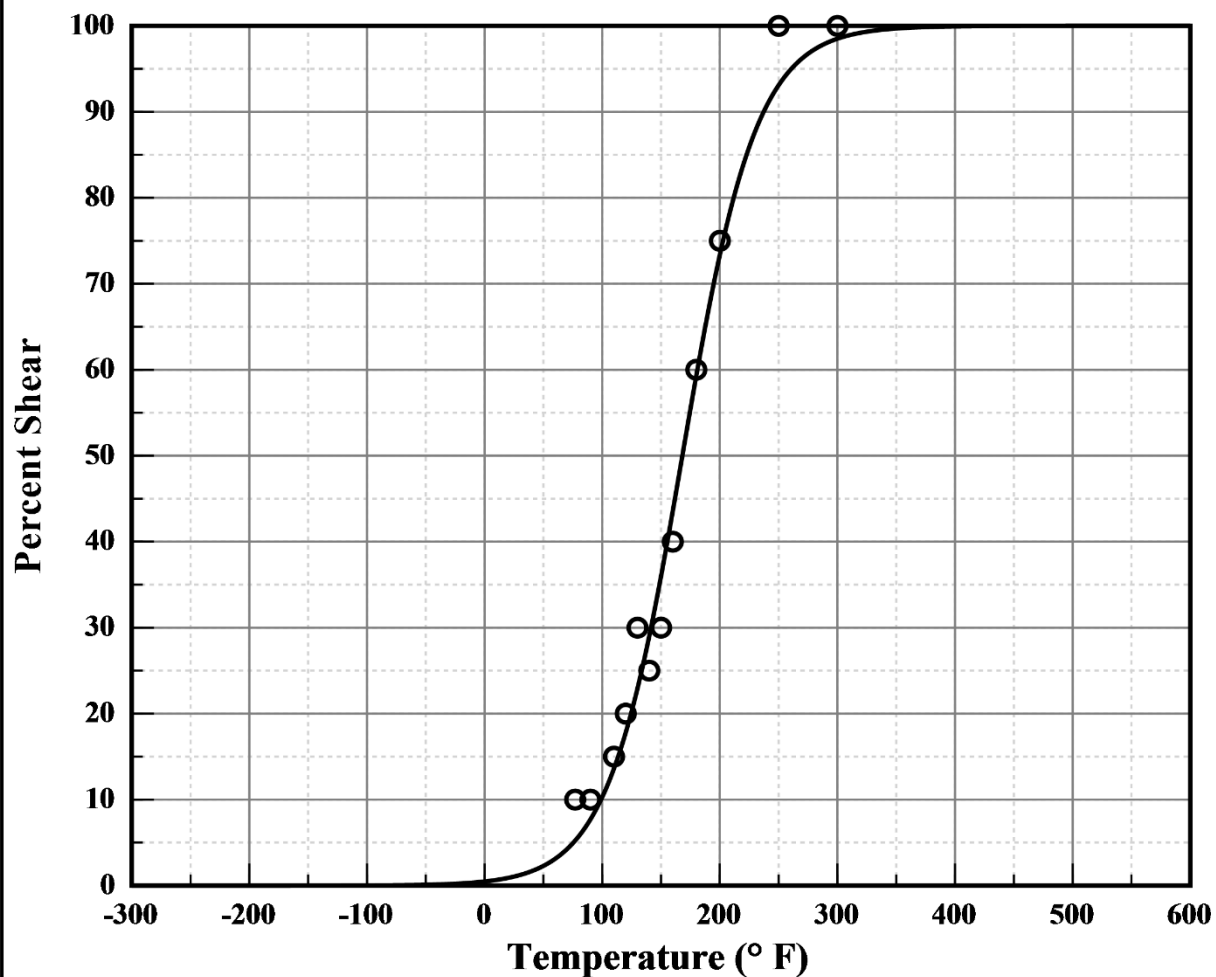
Correlation Coefficient = 0.992

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf %Shear = 100.00 (Fixed)

Lower Shelf %Shear = 0.00 (Fixed)

Temperature at 50% Shear = 168.20

Plant: **Prairie Island 1**
Orientation: **Tangential**Material: **SA508CL3**
Capsule: **N**Heat: **21918/38566**
Fluence: **8.45E+019 n/cm²**

CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Tangential**

Material: **SA508CL3**
Capsule: **N**

Heat: **21918/38566**
Fluence: **8.45E+019 n/cm²**

Capsule N Intermediate Shell Forging C (Tangential)

Charpy V-Notch Data

Temperature (° F)	Input %Shear	Computed %Shear	Differential
77	10.0	5.2	4.77
90	10.0	7.7	2.30
110	15.0	13.6	1.39
120	20.0	17.8	2.20
130	30.0	22.9	7.07
140	25.0	29.0	-4.02
150	30.0	36.0	-5.97
160	40.0	43.6	-3.57
180	60.0	59.3	0.68
200	75.0	73.4	1.65
250	100.0	93.1	6.90
300	100.0	98.5	1.49

Unirradiated Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 9:18 AM

A = 72.65 B = 70.45 C = 95.50 T0 = 35.92 D = 0.00

Correlation Coefficient = 0.979

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf Energy = 143.10 (Fixed)

Lower Shelf Energy = 2.20 (Fixed)

Temp@30 ft-lbs=-31.00° F

Temp@35 ft-lbs=-21.00° F

Temp@50 ft-lbs= 4.10° F

Plant: **Prairie Island 1**

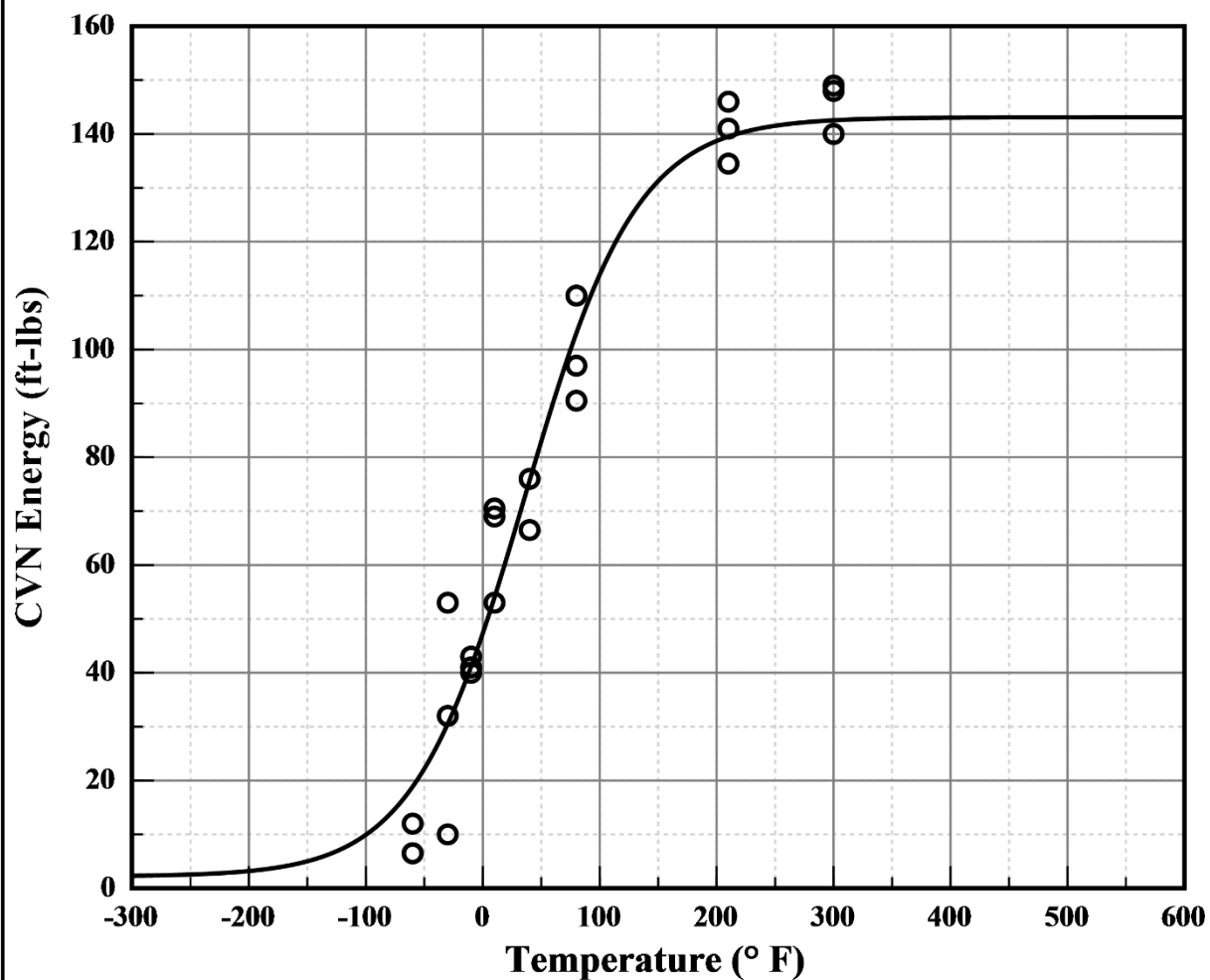
Orientation: **Axial**

Material: **SA508CL3**

Capsule: **Unirrad**

Heat: **21918/38566**

Fluence: **0.00E+000 n/cm²**



CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **Unirrad**

Heat: **21918/38566**
Fluence: **0.00E+000 n/cm²**

Unirradiated Intermediate Shell Forging C (Axial)

Charpy V-Notch Data

Temperature (° F)	Input CVN	Computed CVN	Differential
-60	6.5	18.9	-12.37
-60	12.0	18.9	-6.87
-60	6.5	18.9	-12.37
-30	32.0	30.5	1.49
-30	53.0	30.5	22.49
-30	10.0	30.5	-20.51
-10	41.0	41.2	-0.17
-10	43.0	41.2	1.83
-10	40.0	41.2	-1.17
10	69.0	54.0	15.01
10	53.0	54.0	-0.99
10	70.5	54.0	16.51
40	76.0	75.7	0.34
40	66.5	75.7	-9.16
80	110.0	103.0	6.96
80	90.5	103.0	-12.54
80	97.0	103.0	-6.04
210	141.0	139.5	1.48
210	134.5	139.5	-5.02
210	146.0	139.5	6.48
300	149.0	142.5	6.46
300	148.0	142.5	5.46
300	140.0	142.5	-2.54

Capsule V Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/28/2021 2:48 PM

A = 72.75 B = 70.55 C = 72.79 T0 = 68.90 D = 0.00

Correlation Coefficient = 0.954

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf Energy = 143.30 (Fixed)

Lower Shelf Energy = 2.20 (Fixed)

Temp@30 ft-lbs= 17.80° F

Temp@35 ft-lbs= 25.50° F

Temp@50 ft-lbs= 44.60° F

Plant: **Prairie Island 1**

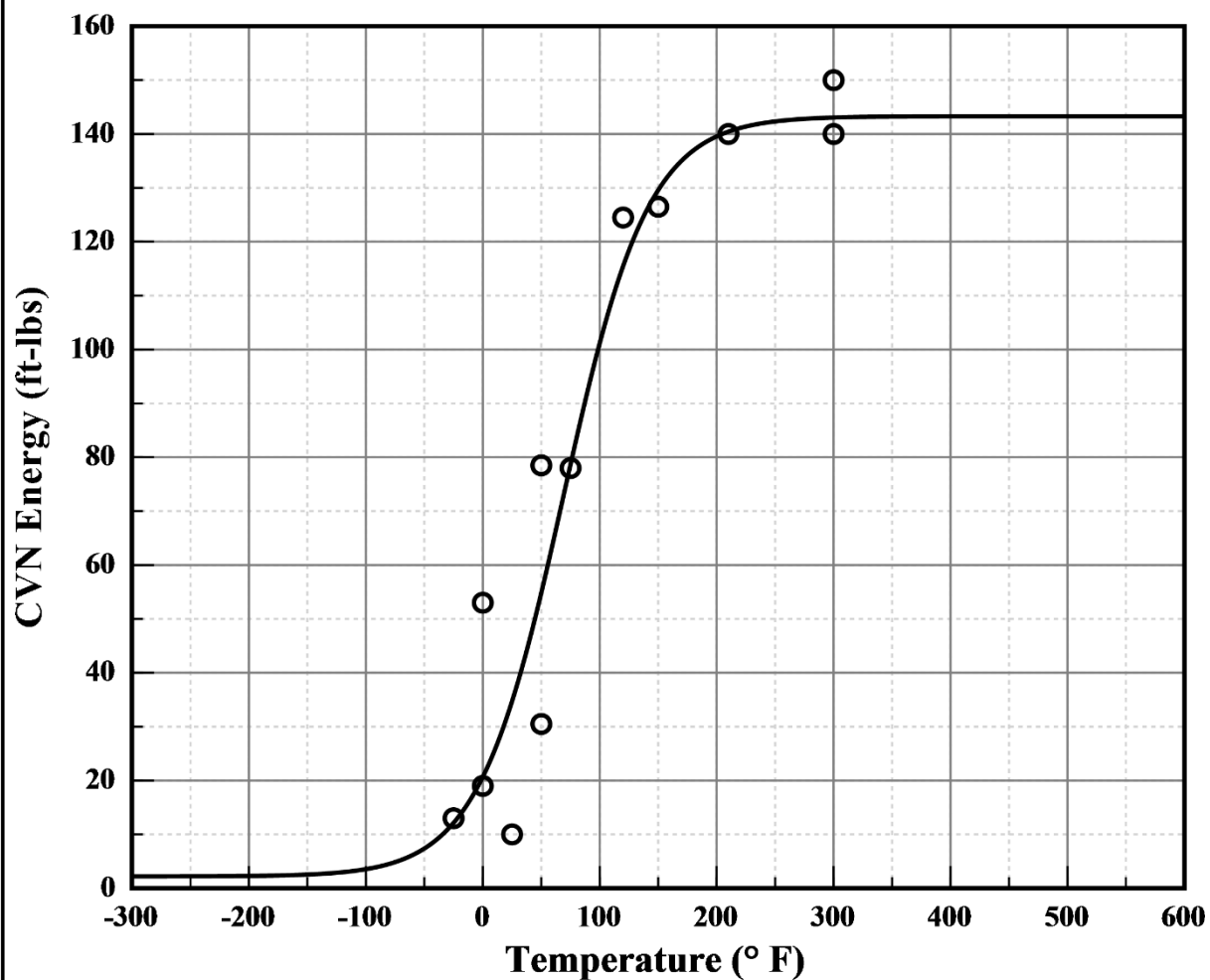
Orientation: **Axial**

Material: **SA508CL3**

Capsule: **V**

Heat: **21918/38566**

Fluence: **6.09E+018 n/cm²**



CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **V**

Heat: **21918/38566**
Fluence: **6.09E+018 n/cm²**

Capsule V Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input CVN	Computed CVN	Differential
-25	13.0	12.1	0.86
0	19.0	20.7	-1.67
0	53.0	20.7	32.33
25	10.0	34.7	-24.71
50	78.5	54.8	23.66
50	30.5	54.8	-24.34
75	78.0	78.7	-0.65
120	124.5	115.5	9.02
150	126.5	129.6	-3.08
210	140.0	140.4	-0.44
300	140.0	143.1	-3.05
300	150.0	143.1	6.95

Capsule P Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 7:37 AM

A = 69.25 B = 67.05 C = 137.57 T0 = 95.10 D = 0.00

Correlation Coefficient = 0.967

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf Energy = 136.30 (Fixed)

Lower Shelf Energy = 2.20 (Fixed)

Temp@30 ft-lbs= 2.90° F

Temp@35 ft-lbs= 17.60° F

Temp@50 ft-lbs= 54.50° F

Plant: **Prairie Island 1**

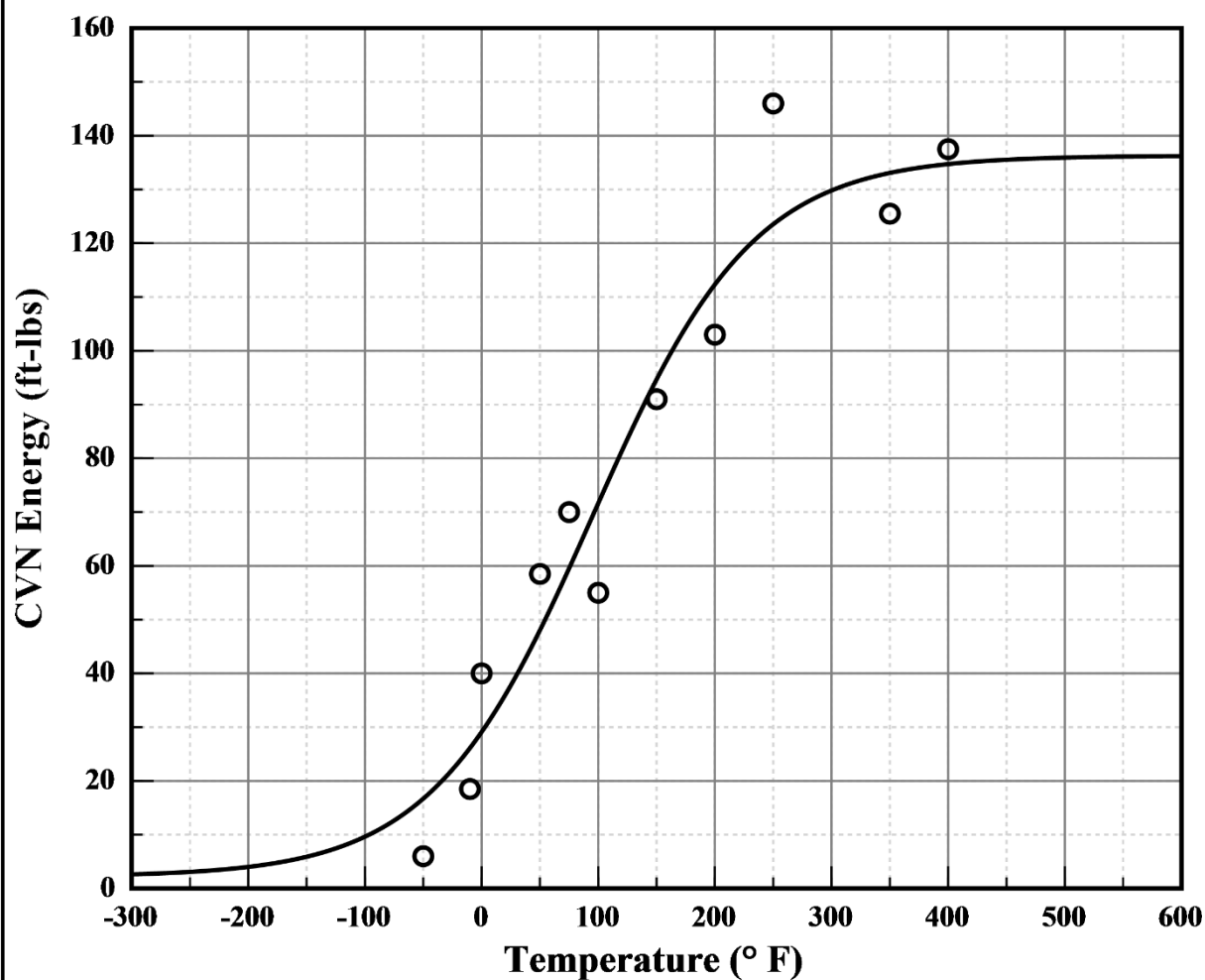
Orientation: **Axial**

Material: **SA508CL3**

Capsule: **P**

Heat: **21918/38566**

Fluence: **1.31E+019 n/cm²**



CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **P**

Heat: **21918/38566**
Fluence: **1.31E+019 n/cm²**

Capsule P Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input CVN	Computed CVN	Differential
-50	6.0	16.7	-10.71
-10	18.5	26.1	-7.61
0	40.0	29.1	10.90
50	58.5	48.0	10.48
75	70.0	59.5	10.48
100	55.0	71.6	-16.64
150	91.0	94.7	-3.67
200	103.0	112.3	-9.33
250	146.0	123.5	22.46
350	125.5	133.1	-7.58
400	137.5	134.7	2.77

Capsule R Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 8:09 AM

$A = 65.45$ $B = 63.25$ $C = 121.18$ $T_0 = 129.73$ $D = 0.00$

Correlation Coefficient = 0.947

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf Energy = 128.70 (Fixed)

Lower Shelf Energy = 2.20 (Fixed)

Temp@30 ft-lbs= 53.00° F

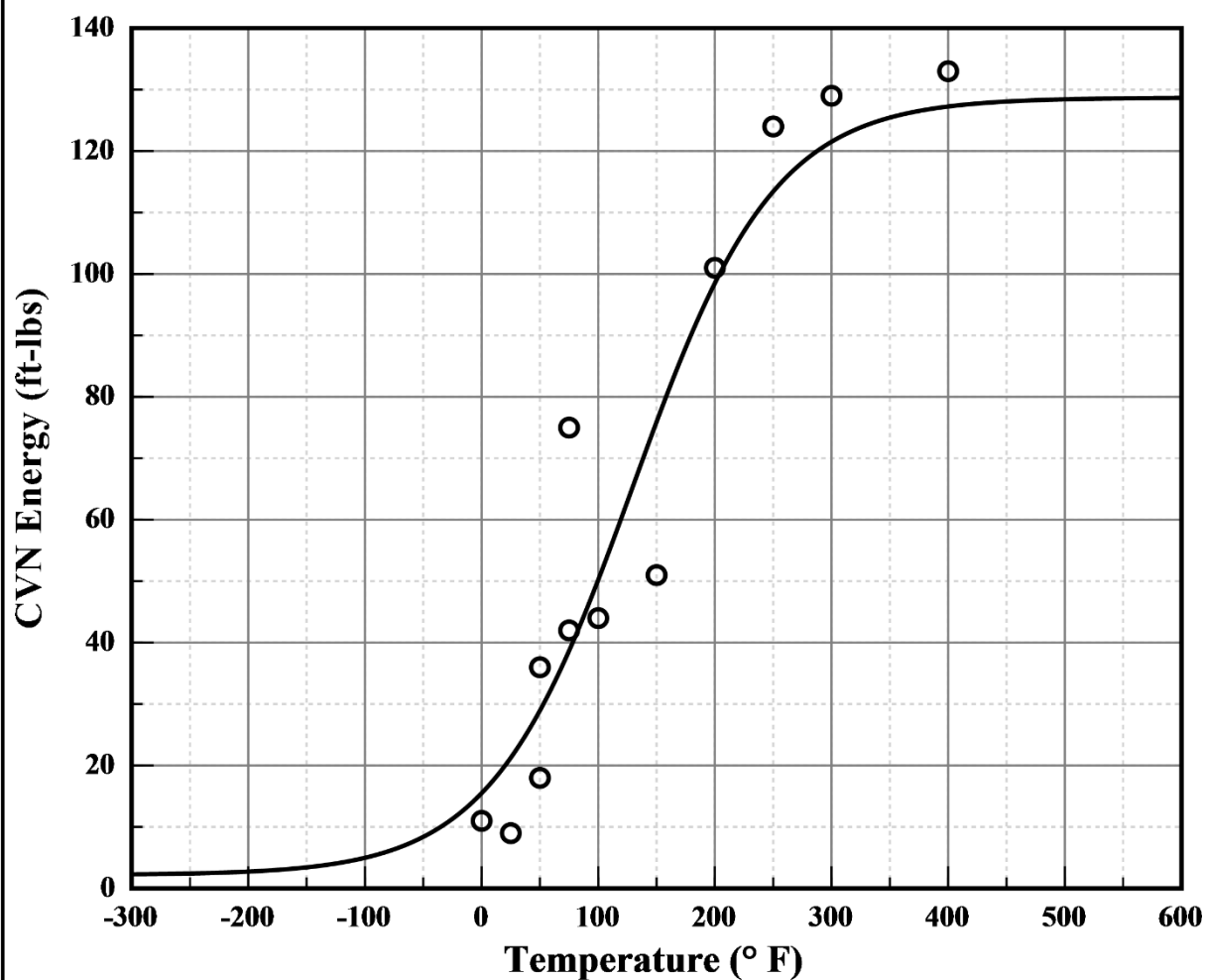
Temp@35 ft-lbs= 66.20° F

Temp@50 ft-lbs= 99.60° F

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **R**

Heat: **21918/38566**
Fluence: **4.02E+019 n/cm²**



CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **R**

Heat: **21918/38566**
Fluence: **4.02E+019 n/cm²**

Capsule R Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input CVN	Computed CVN	Differential
0	11.0	15.5	-4.50
25	9.0	21.3	-12.27
50	36.0	29.0	7.04
50	18.0	29.0	-10.96
75	75.0	38.7	36.32
75	42.0	38.7	3.32
100	44.0	50.2	-6.24
150	51.0	75.9	-24.93
200	101.0	98.5	2.50
250	124.0	113.4	10.58
300	129.0	121.5	7.48
400	133.0	127.3	5.75

Capsule S Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 8:30 AM

A = 68.60 B = 66.40 C = 100.40 T0 = 109.64 D = 0.00

Correlation Coefficient = 0.976

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf Energy = 135.00 (Fixed)

Lower Shelf Energy = 2.20 (Fixed)

Temp@30 ft-lbs= 43.00° F

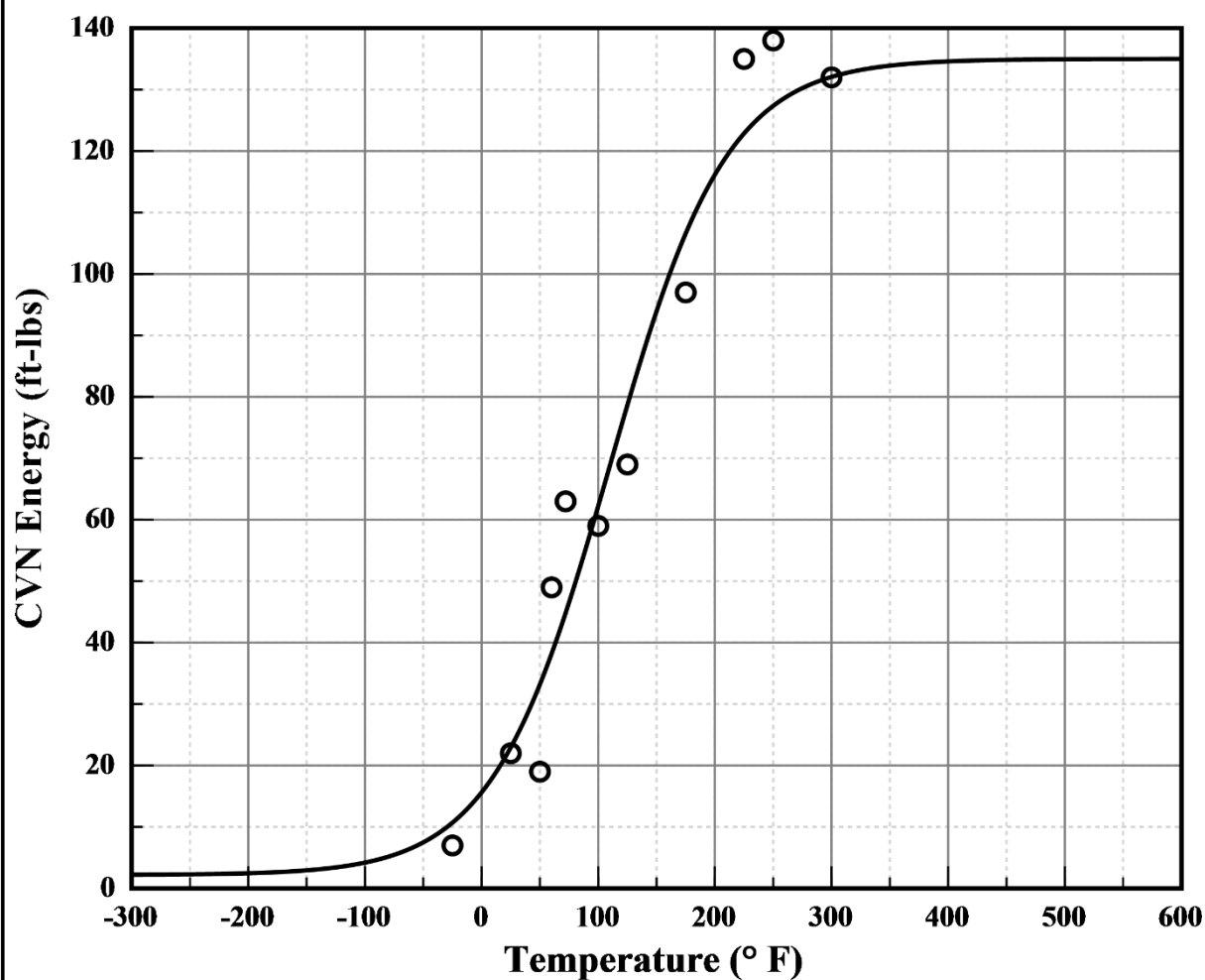
Temp@35 ft-lbs= 53.70° F

Temp@50 ft-lbs= 80.80° F

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **S**

Heat: **21918/38566**
Fluence: **4.39E+019 n/cm²**



CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **S**

Heat: **21918/38566**
Fluence: **4.39E+019 n/cm²**

Capsule S Intermediate Shell Forging C (Axial)

Charpy V-Notch Data

Temperature (° F)	Input CVN	Computed CVN	Differential
-25	7.0	10.7	-3.70
25	22.0	23.0	-0.96
50	19.0	33.2	-14.22
60	49.0	38.2	10.79
72	63.0	44.8	18.19
100	59.0	62.2	-3.24
125	69.0	78.7	-9.68
175	97.0	106.6	-9.60
225	135.0	122.9	12.12
250	138.0	127.4	10.64
300	132.0	132.1	-0.07

Capsule N Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/23/2021 6:02 AM

A = 60.85 B = 58.65 C = 87.65 T0 = 167.71 D = 0.00

Correlation Coefficient = 0.877

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf Energy = 119.50 (Fixed)

Lower Shelf Energy = 2.20 (Fixed)

Temp@30 ft-lbs=116.50° F

Temp@35 ft-lbs=126.30° F

Temp@50 ft-lbs=151.40° F

Plant: **Prairie Island 1**

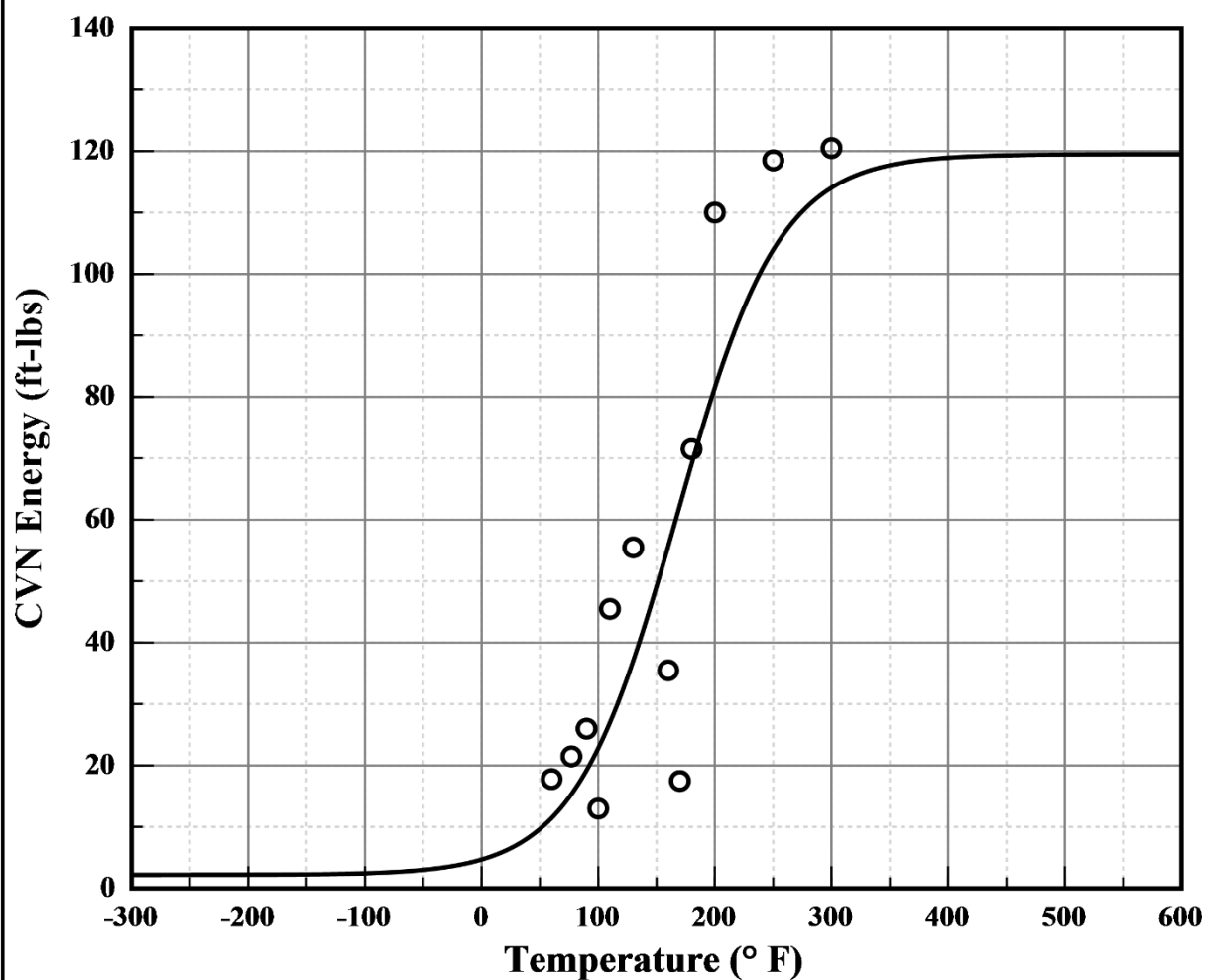
Orientation: **Axial**

Material: **SA508CL3**

Capsule: **N**

Heat: **21918/38566**

Fluence: **8.45E+019 n/cm²**



CVGraph 6.02

06/23/2021

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **N**

Heat: **21918/38566**
Fluence: **8.45E+019 n/cm²**

Capsule N Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input CVN	Computed CVN	Differential
60	17.8	11.5	6.35
77	21.5	15.3	6.15
90	26.0	19.2	6.77
100	13.0	22.8	-9.82
110	45.5	27.0	18.51
130	55.5	37.1	18.43
160	35.5	55.7	-20.21
170	17.5	62.4	-44.89
180	71.5	69.0	2.48
200	110.0	81.5	28.47
250	118.5	103.9	14.56
300	120.5	114.0	6.46

Unirradiated Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 9:21 AM

A = 48.33 B = 47.33 C = 79.08 T0 = 9.99 D = 0.00

Correlation Coefficient = 0.976

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

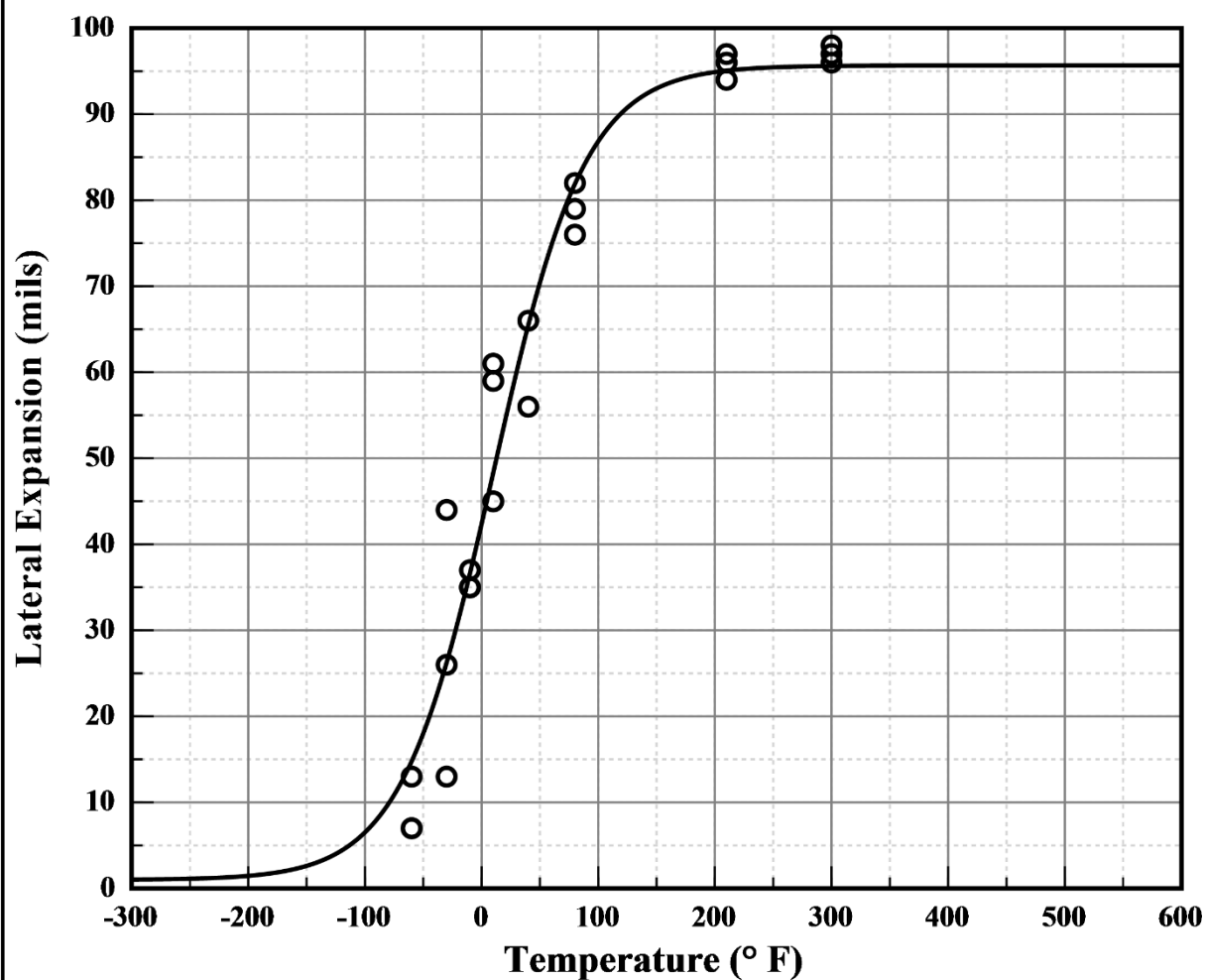
Upper Shelf L.E. = 95.67 Lower Shelf L.E. = 1.00 (Fixed)

Temp@35 mils = -12.90° F

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **Unirrad**

Heat: **21918/38566**
Fluence: **0.00E+000 n/cm²**



CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **Unirrad**

Heat: **21918/38566**
Fluence: **0.00E+000 n/cm²**

Unirradiated Intermediate Shell Forging C (Axial)

Charpy V-Notch Data

Temperature (° F)	Input L. E.	Computed L. E.	Differential
-60	7.0	14.8	-7.78
-60	13.0	14.8	-1.78
-60	7.0	14.8	-7.78
-30	26.0	26.2	-0.25
-30	44.0	26.2	17.75
-30	13.0	26.2	-13.25
-10	35.0	36.6	-1.61
-10	37.0	36.6	0.39
-10	35.0	36.6	-1.61
10	61.0	48.3	12.66
10	45.0	48.3	-3.34
10	59.0	48.3	10.66
40	66.0	65.5	0.52
40	56.0	65.5	-9.48
80	82.0	81.9	0.11
80	76.0	81.9	-5.89
80	79.0	81.9	-2.89
210	97.0	95.1	1.93
210	94.0	95.1	-1.07
210	96.0	95.1	0.93
300	96.0	95.6	0.40
300	97.0	95.6	1.40
300	98.0	95.6	2.40

Capsule V Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/28/2021 2:51 PM

A = 43.73 B = 42.73 C = 79.58 T0 = 64.48 D = 0.00

Correlation Coefficient = 0.938

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

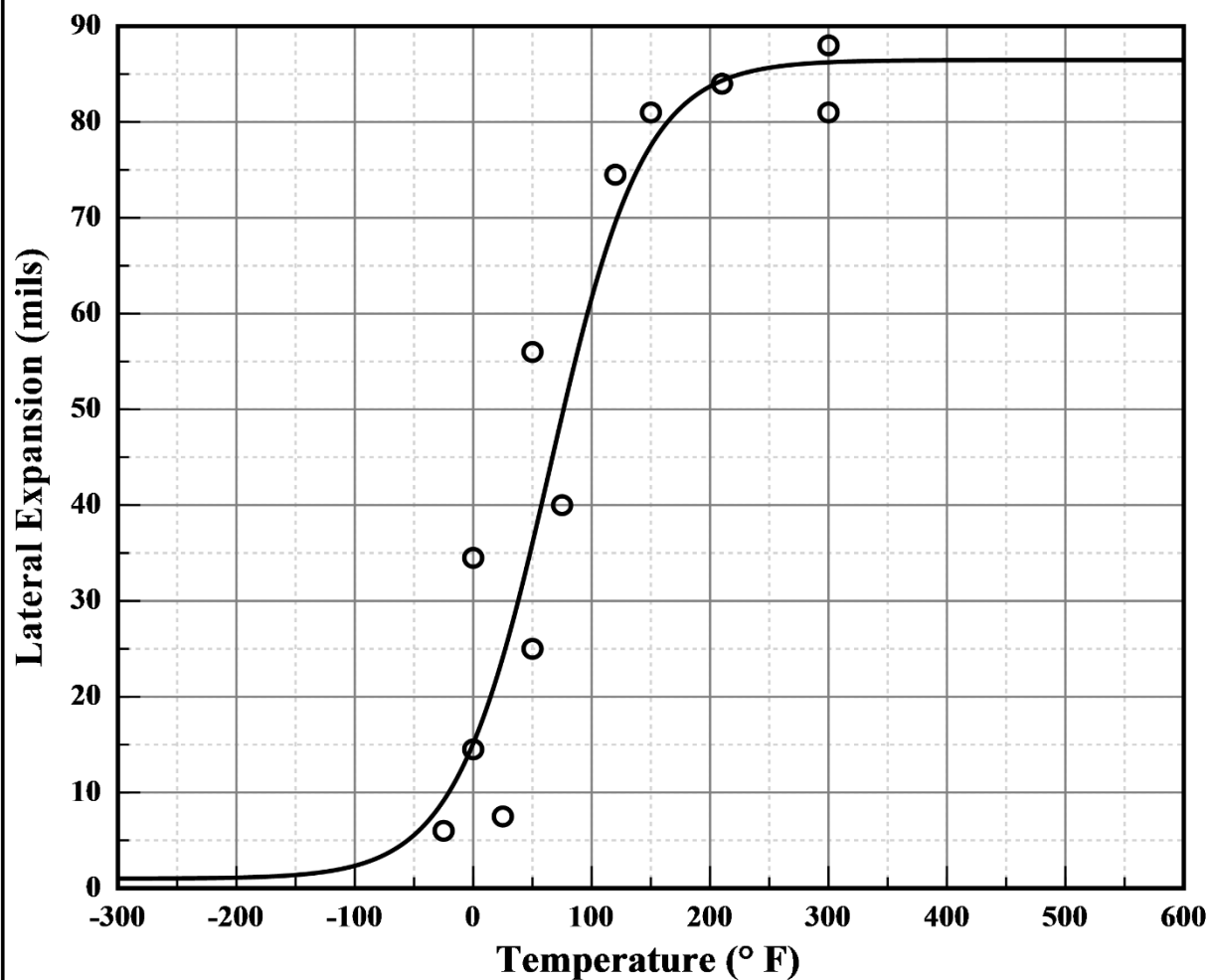
Upper Shelf L.E. = 86.47 Lower Shelf L.E. = 1.00 (Fixed)

Temp@35 mils = 48.00° F

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **V**

Heat: **21918/38566**
Fluence: **6.09E+018 n/cm²**



CVGraph 6.02

06/28/2021

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **V**

Heat: **21918/38566**
Fluence: **6.09E+018 n/cm²**

Capsule V Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input L. E.	Computed L. E.	Differential
-25	6.0	9.2	-3.16
0	14.5	15.1	-0.61
0	34.5	15.1	19.39
25	7.5	24.1	-16.62
50	56.0	36.0	19.96
50	25.0	36.0	-11.04
75	40.0	49.3	-9.35
120	74.5	69.5	5.00
150	81.0	77.5	3.46
210	84.0	84.3	-0.32
300	88.0	86.2	1.76
300	81.0	86.2	-5.24

Capsule P Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 7:41 AM

A = 31.48 B = 30.48 C = 74.48 T0 = 9.65 D = 0.00

Correlation Coefficient = 0.935

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

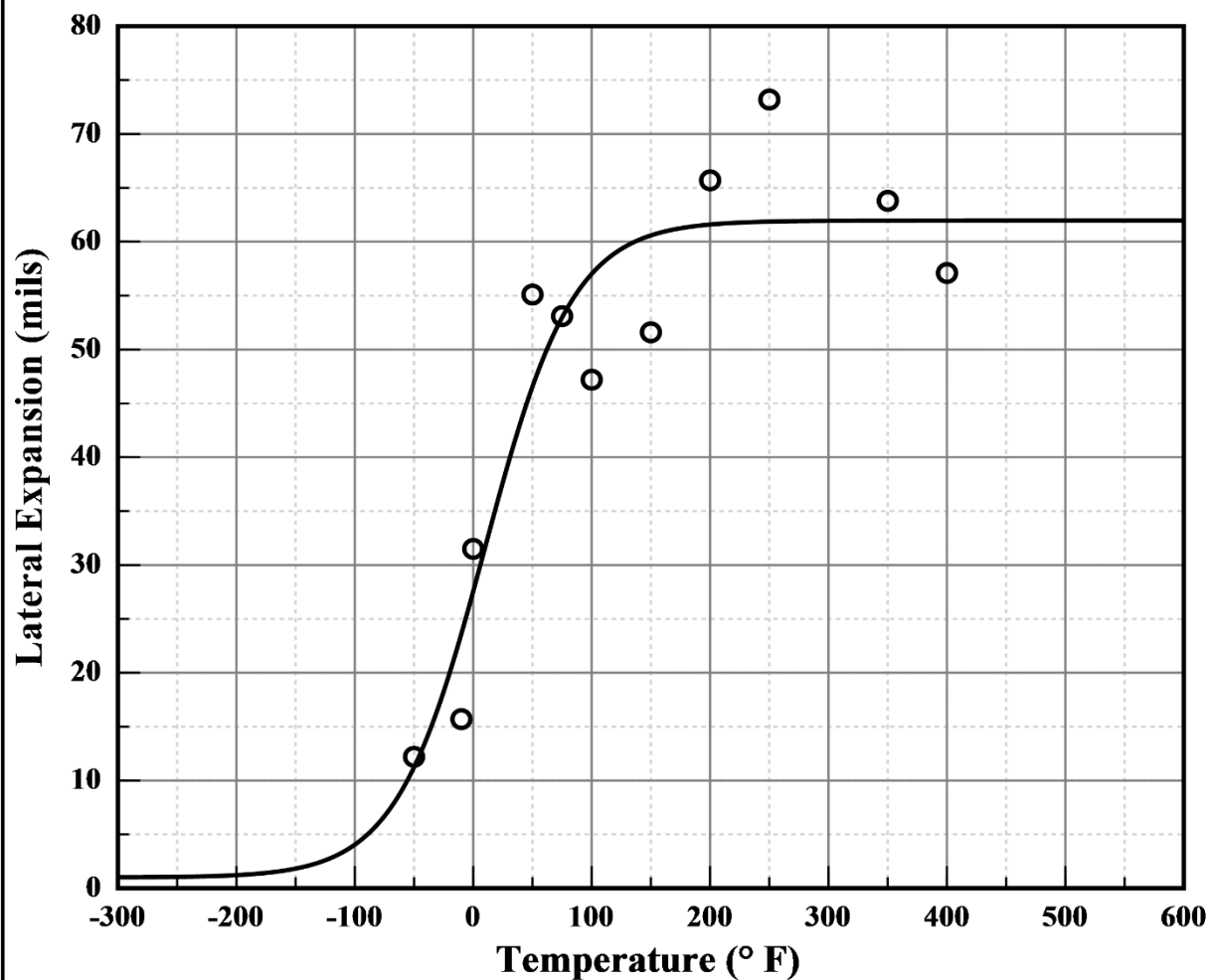
Upper Shelf L.E. = 61.97 Lower Shelf L.E. = 1.00 (Fixed)

Temp@35 mils = 18.30° F

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **P**

Heat: **21918/38566**
Fluence: **1.31E+019 n/cm²**



CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **P**

Heat: **21918/38566**
Fluence: **1.31E+019 n/cm²**

Capsule P Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input L. E.	Computed L. E.	Differential
-50	12.2	11.2	0.97
-10	15.7	23.6	-7.92
0	31.5	27.6	3.95
50	55.1	46.5	8.55
75	53.1	53.0	0.12
100	47.2	57.0	-9.81
150	51.6	60.6	-8.99
200	65.7	61.6	4.10
250	73.2	61.9	11.33
350	63.8	62.0	1.84
400	57.1	62.0	-4.86

Capsule R Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 8:12 AM

A = 43.15 B = 42.15 C = 130.11 T0 = 110.72 D = 0.00

Correlation Coefficient = 0.944

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

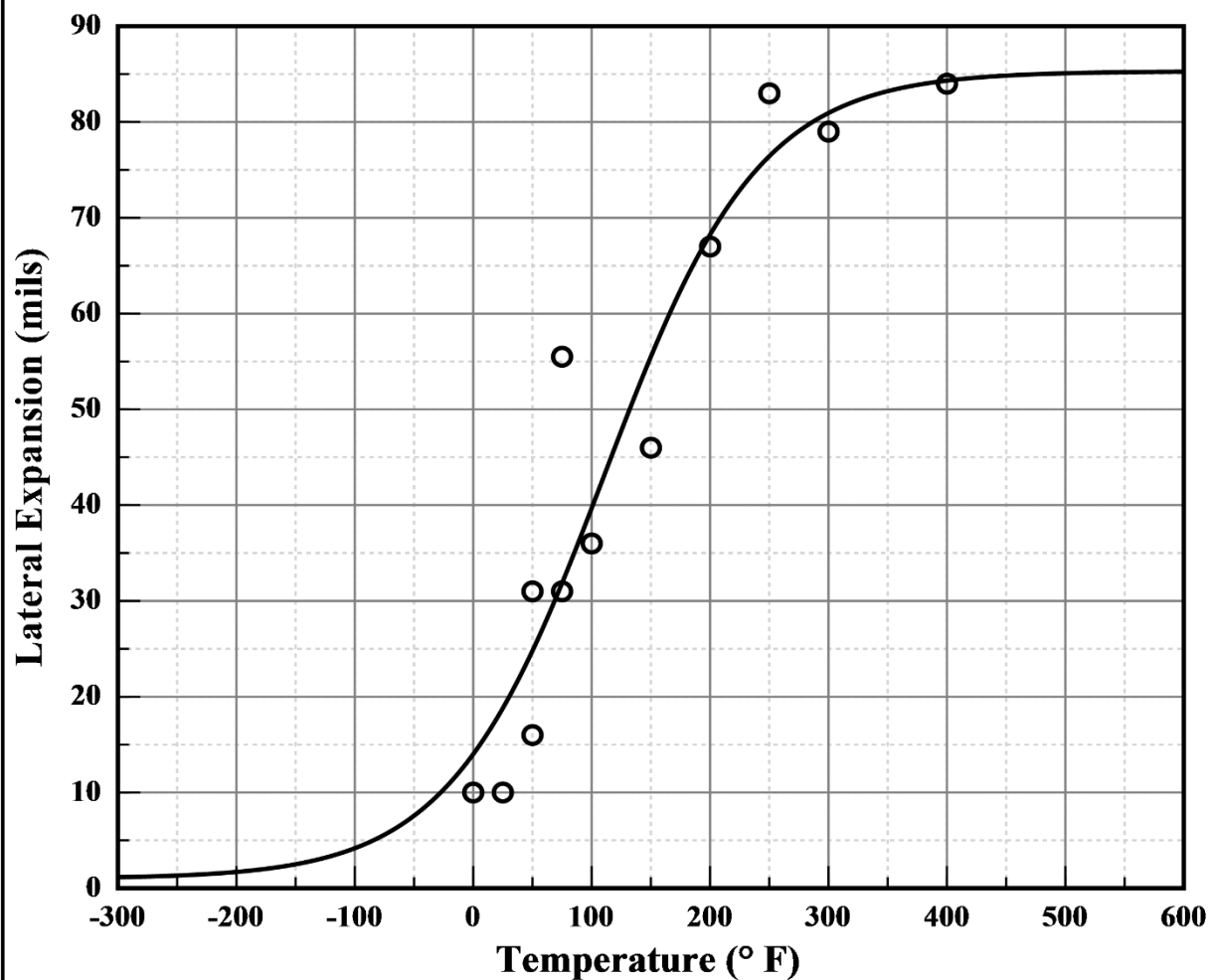
Upper Shelf L.E. = 85.30 Lower Shelf L.E. = 1.00 (Fixed)

Temp@35 mils = 85.30° F

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **R**

Heat: **21918/38566**
Fluence: **4.02E+019 n/cm²**



CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **R**

Heat: **21918/38566**
Fluence: **4.02E+019 n/cm²**

Capsule R Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input L. E.	Computed L. E.	Differential
0	10.0	14.0	-4.00
25	10.0	18.8	-8.81
50	31.0	24.8	6.20
50	16.0	24.8	-8.80
75	55.5	31.9	23.64
75	31.0	31.9	-0.86
100	36.0	39.7	-3.69
150	46.0	55.5	-9.50
200	67.0	68.3	-1.25
250	83.0	76.4	6.56
300	79.0	80.9	-1.94
400	84.0	84.3	-0.33

Capsule S Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 8:33 AM

A = 41.02 B = 40.02 C = 86.00 T0 = 88.03 D = 0.00

Correlation Coefficient = 0.959

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

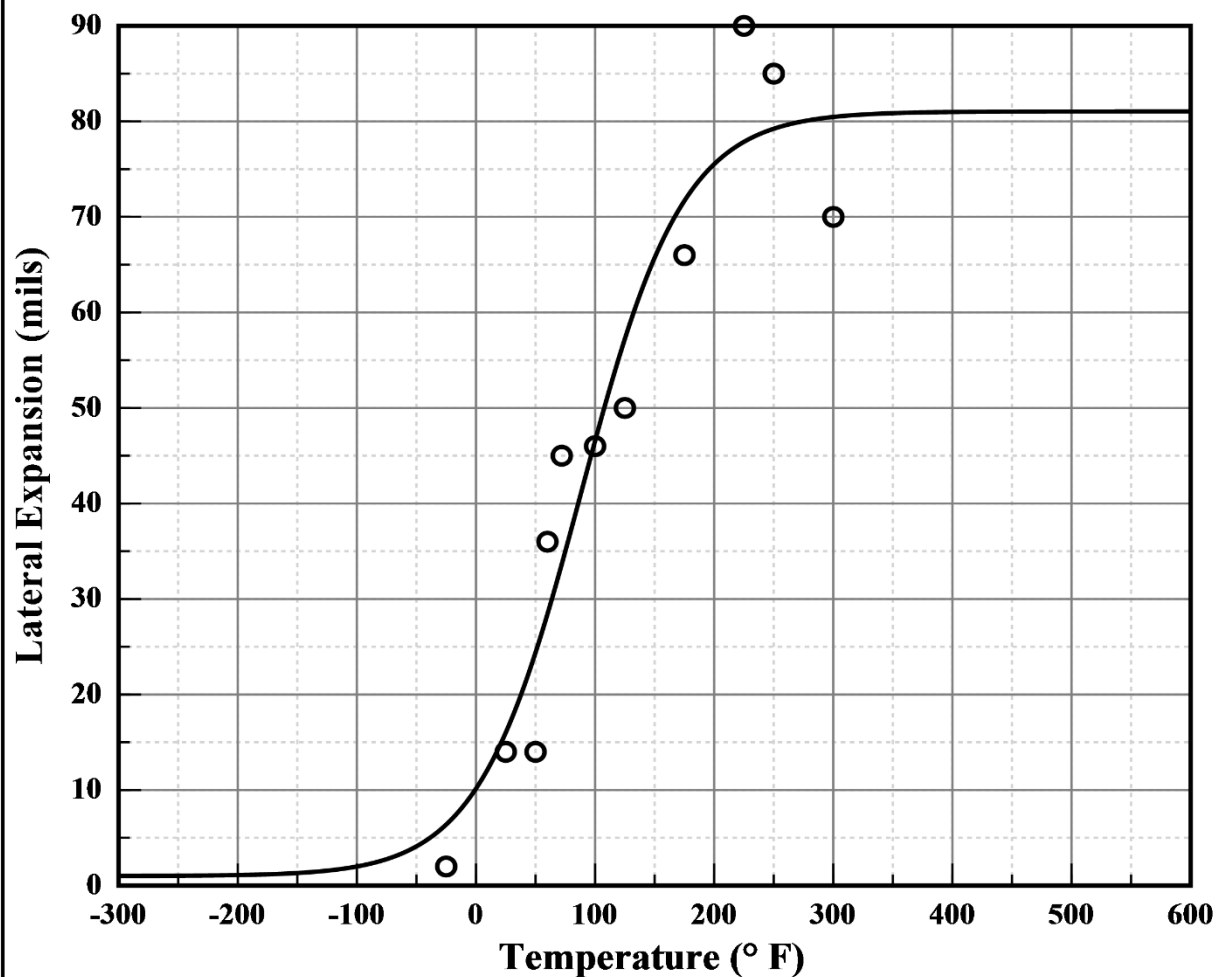
Upper Shelf L.E. = 81.04 Lower Shelf L.E. = 1.00 (Fixed)

Temp@35 mils = 75.00° F

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **S**

Heat: **21918/38566**
Fluence: **4.39E+019 n/cm²**



CVGraph 6.02

06/29/2021

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **S**

Heat: **21918/38566**
Fluence: **4.39E+019 n/cm²**

Capsule S Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input L. E.	Computed L. E.	Differential
-25	2.0	6.4	-4.39
25	14.0	16.0	-2.01
50	14.0	24.4	-10.39
60	36.0	28.4	7.58
72	45.0	33.6	11.36
100	46.0	46.6	-0.55
125	50.0	57.2	-7.24
175	66.0	71.7	-5.69
225	90.0	77.9	12.14
250	85.0	79.2	5.77
300	70.0	80.5	-10.47

Capsule N Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/23/2021 6:07 AM

A = 50.58 B = 49.58 C = 127.22 T0 = 180.22 D = 0.00

Correlation Coefficient = 0.870

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf L.E. = 100.16

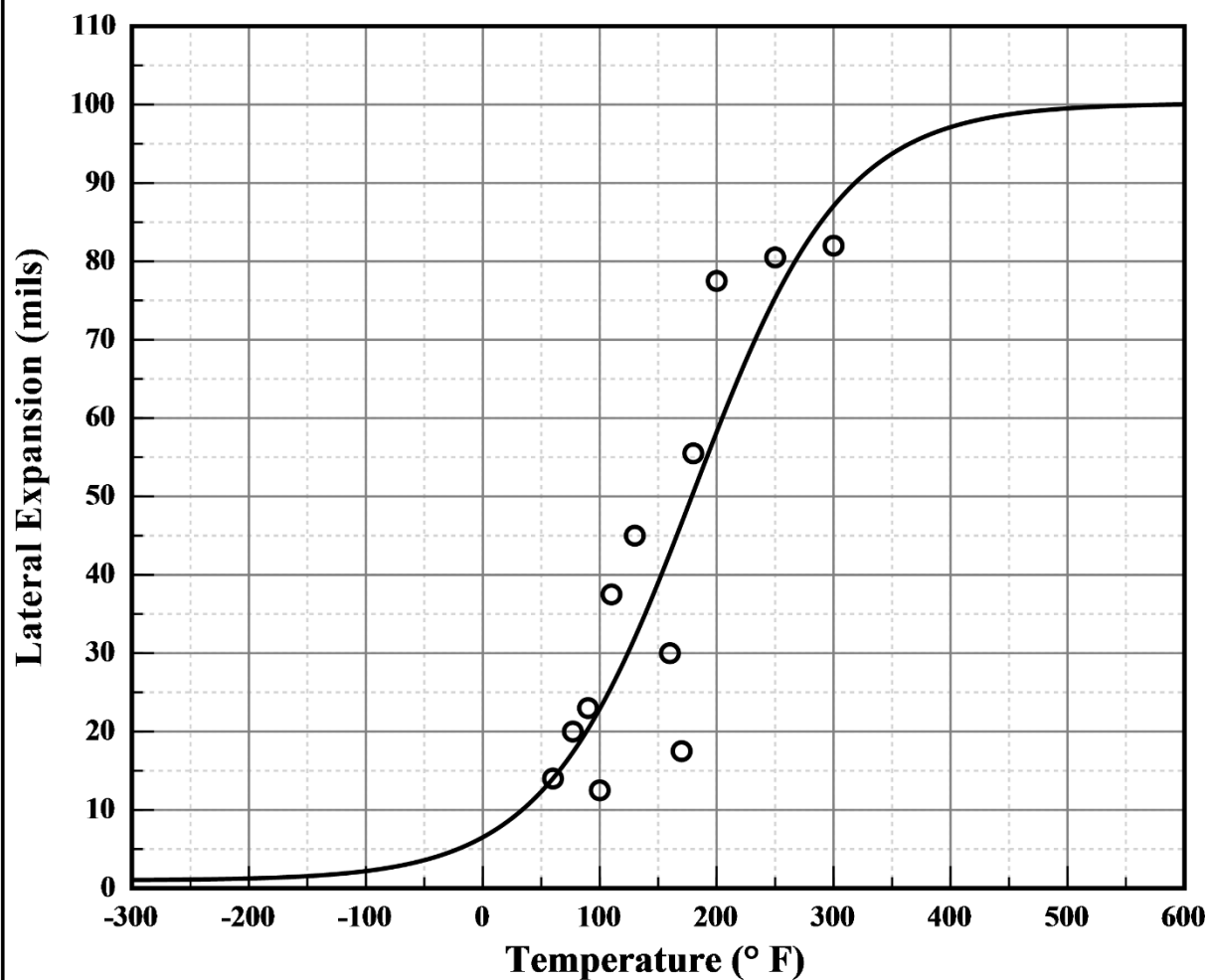
Lower Shelf L.E. = 1.00 (Fixed)

Temp@35 mils=138.90° F

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **N**

Heat: **21918/38566**
Fluence: **8.45E+019 n/cm²**



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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **N**

Heat: **21918/38566**
Fluence: **8.45E+019 n/cm²**

Capsule N Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input L. E.	Computed L. E.	Differential
60	14.0	14.0	-0.02
77	20.0	17.3	2.65
90	23.0	20.3	2.67
100	12.5	22.9	-10.39
110	37.5	25.7	11.81
130	45.0	32.0	13.03
160	30.0	42.8	-12.77
170	17.5	46.6	-29.11
180	55.5	50.5	5.01
200	77.5	58.2	19.27
250	80.5	75.3	5.16
300	82.0	87.1	-5.07

Unirradiated Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 9:20 AM

A = 50.00 B = 50.00 C = 114.51 T0 = 47.94 D = 0.00

Correlation Coefficient = 0.987

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf %Shear = 100.00 (Fixed)

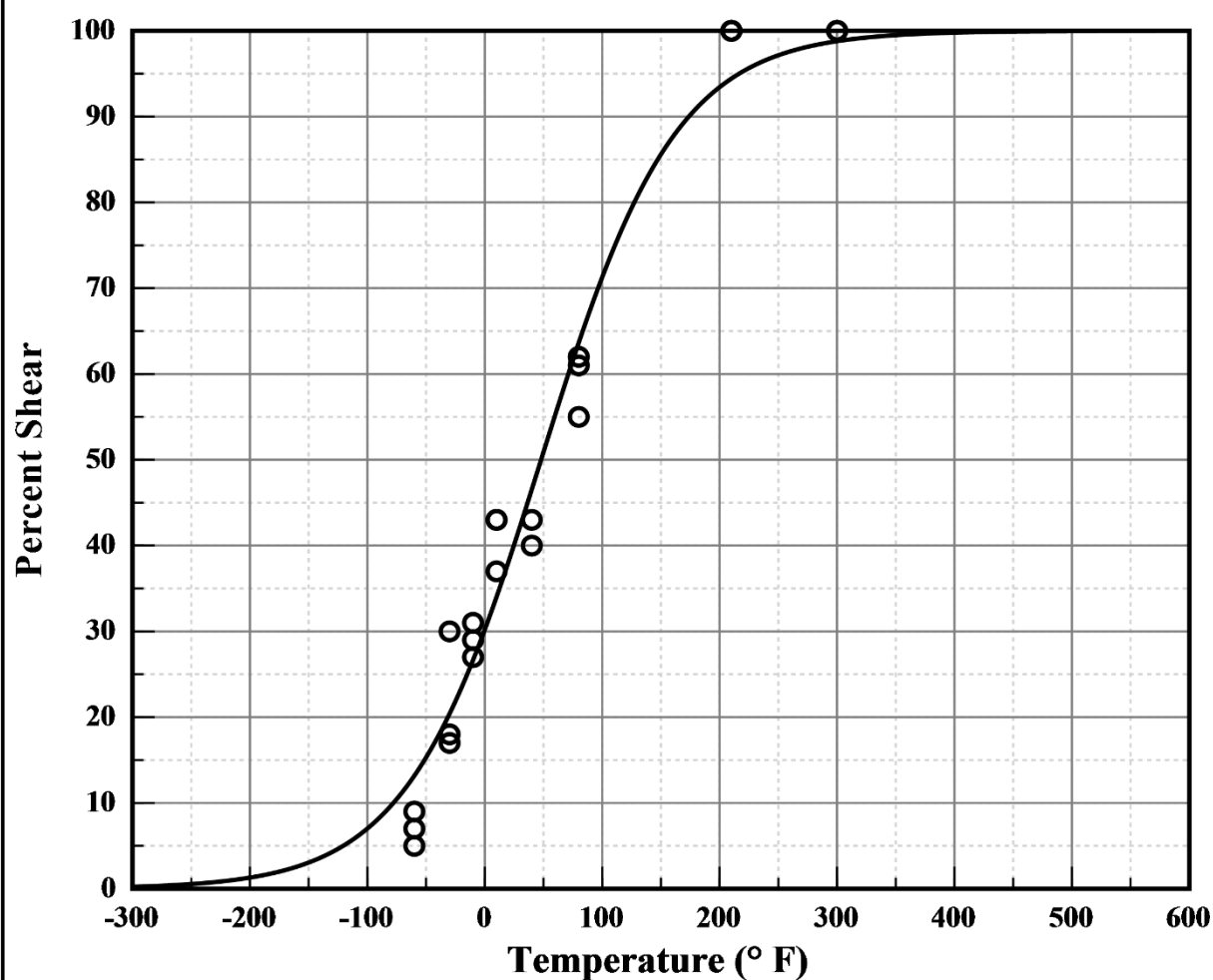
Lower Shelf %Shear = 0.00 (Fixed)

Temperature at 50% Shear = 48.00

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **Unirrad**

Heat: **21918/38566**
Fluence: **0.00E+000 n/cm²**



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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **Unirrad**

Heat: **21918/38566**
Fluence: **0.00E+000 n/cm²**

Unirradiated Intermediate Shell Forging C (Axial)

Charpy V-Notch Data

Temperature (° F)	Input %Shear	Computed %Shear	Differential
-60	5.0	13.2	-8.18
-60	9.0	13.2	-4.18
-60	7.0	13.2	-6.18
-30	18.0	20.4	-2.40
-30	30.0	20.4	9.60
-30	17.0	20.4	-3.40
-10	31.0	26.7	4.34
-10	27.0	26.7	0.34
-10	29.0	26.7	2.34
10	43.0	34.0	8.99
10	37.0	34.0	2.99
10	43.0	34.0	8.99
40	43.0	46.5	-3.54
40	40.0	46.5	-6.54
80	62.0	63.6	-1.64
80	55.0	63.6	-8.64
80	61.0	63.6	-2.64
210	100.0	94.4	5.57
210	100.0	94.4	5.57
210	100.0	94.4	5.57
300	100.0	98.8	1.21
300	100.0	98.8	1.21
300	100.0	98.8	1.21

Capsule V Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/28/2021 2:49 PM

A = 50.00 B = 50.00 C = 95.24 T0 = 90.74 D = 0.00

Correlation Coefficient = 0.990

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf %Shear = 100.00 (Fixed)

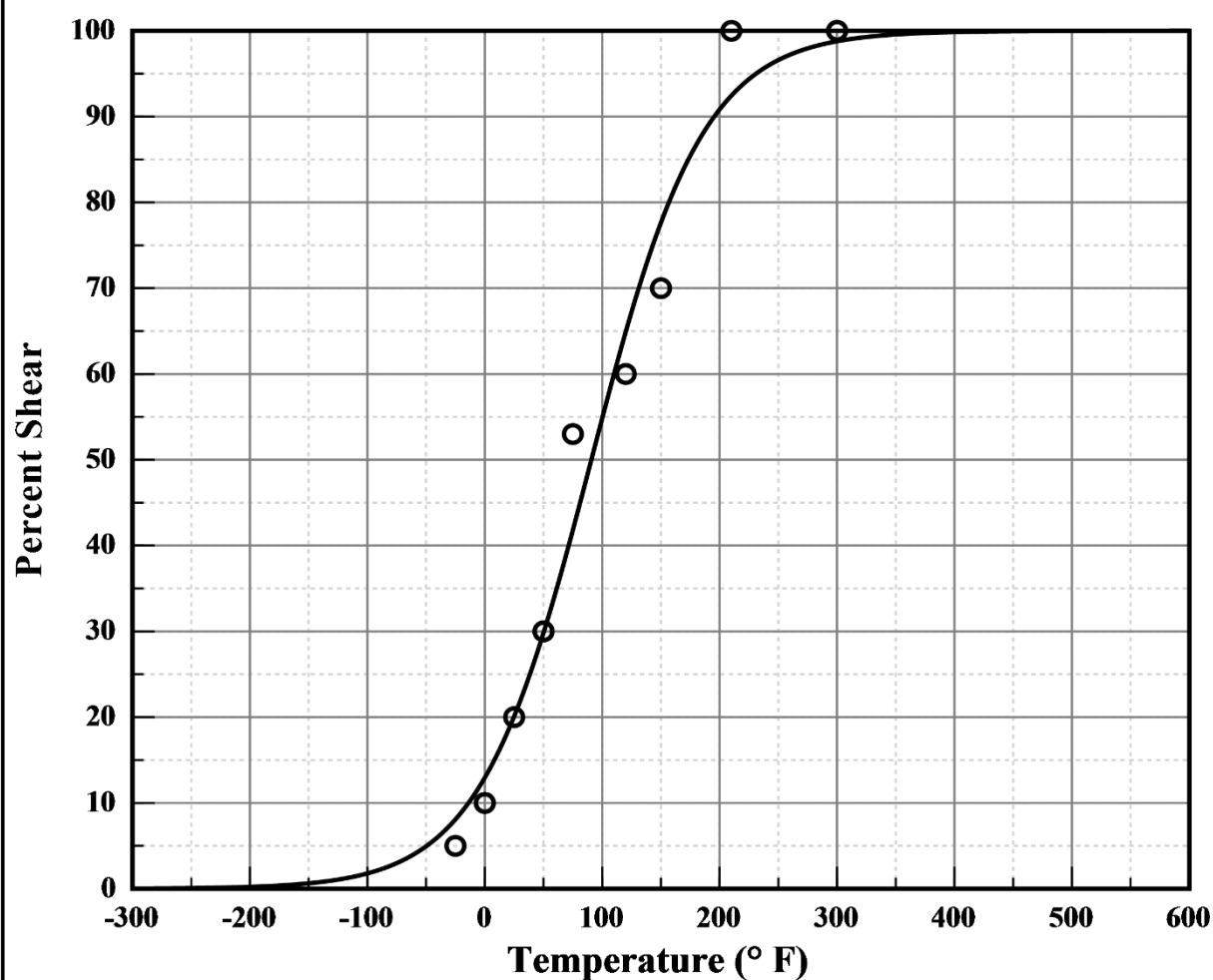
Lower Shelf %Shear = 0.00 (Fixed)

Temperature at 50% Shear = 90.80

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **V**

Heat: **21918/38566**
Fluence: **6.09E+018 n/cm²**



CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **V**

Heat: **21918/38566**
Fluence: **6.09E+018 n/cm²**

Capsule V Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input %Shear	Computed %Shear	Differential
-25	5.0	8.1	-3.09
0	10.0	12.9	-2.95
0	10.0	12.9	-2.95
25	20.0	20.1	-0.09
50	30.0	29.8	0.17
50	30.0	29.8	0.17
75	53.0	41.8	11.19
120	60.0	64.9	-4.90
150	70.0	77.6	-7.63
210	100.0	92.4	7.55
300	100.0	98.8	1.22
300	100.0	98.8	1.22

Capsule P Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 7:34 AM

A = 50.00 B = 50.00 C = 115.79 T0 = 103.21 D = 0.00

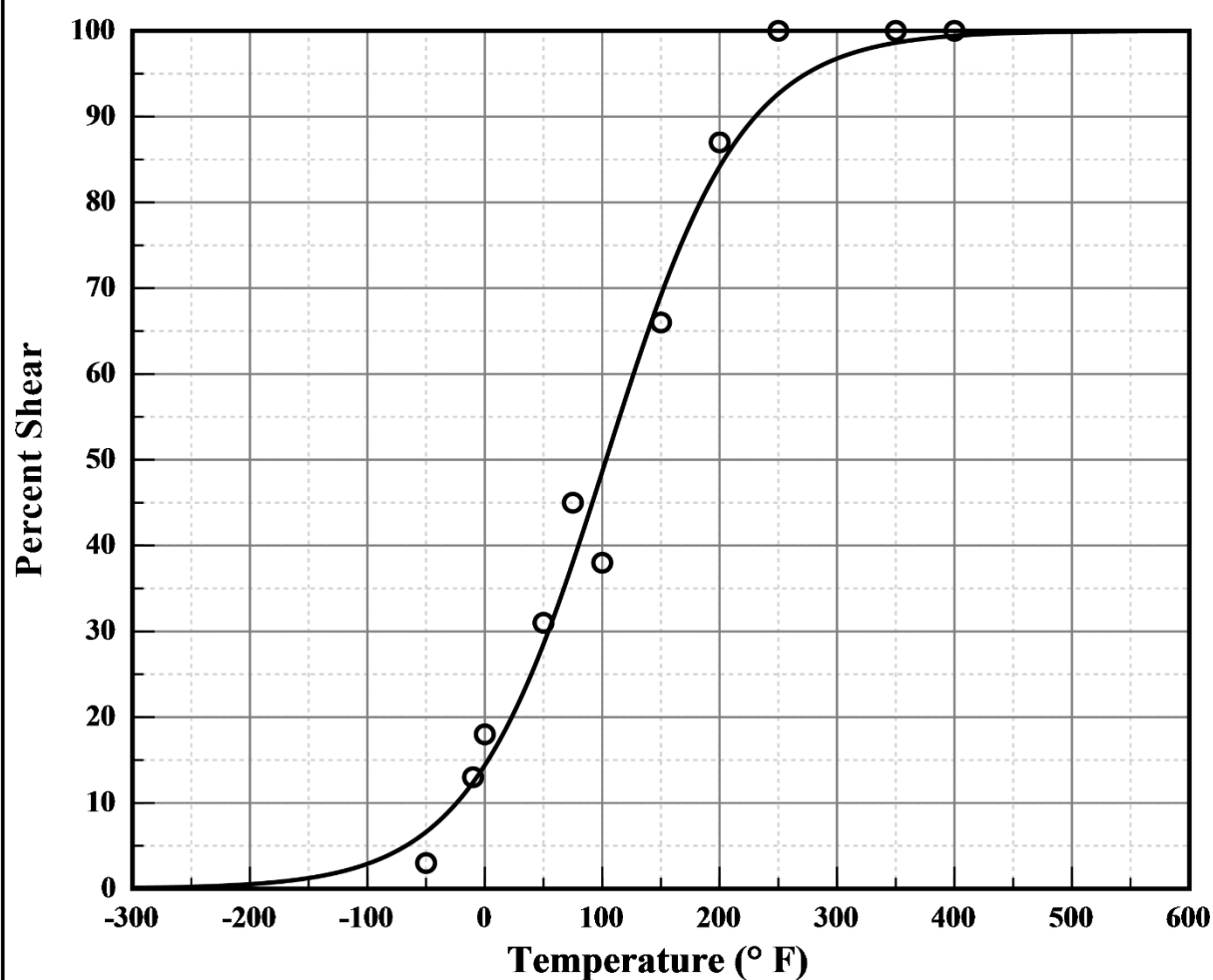
Correlation Coefficient = 0.991

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf %Shear = 100.00 (Fixed)

Lower Shelf %Shear = 0.00 (Fixed)

Temperature at 50% Shear = 103.30

Plant: **Prairie Island 1**
Orientation: **Axial**Material: **SA508CL3**
Capsule: **P**Heat: **21918/38566**
Fluence: **1.31E+019 n/cm²**

CVGraph 6.02

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **P**

Heat: **21918/38566**
Fluence: **1.31E+019 n/cm²**

Capsule P Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input %Shear	Computed %Shear	Differential
-50	3.0	6.6	-3.62
-10	13.0	12.4	0.61
0	18.0	14.4	3.60
50	31.0	28.5	2.49
75	45.0	38.1	6.95
100	38.0	48.6	-10.61
150	66.0	69.2	-3.17
200	87.0	84.2	2.82
250	100.0	92.7	7.34
350	100.0	98.6	1.39
400	100.0	99.4	0.59

Capsule R Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 8:10 AM

A = 50.00 B = 50.00 C = 100.50 T0 = 140.03 D = 0.00

Correlation Coefficient = 0.971

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf %Shear = 100.00 (Fixed)

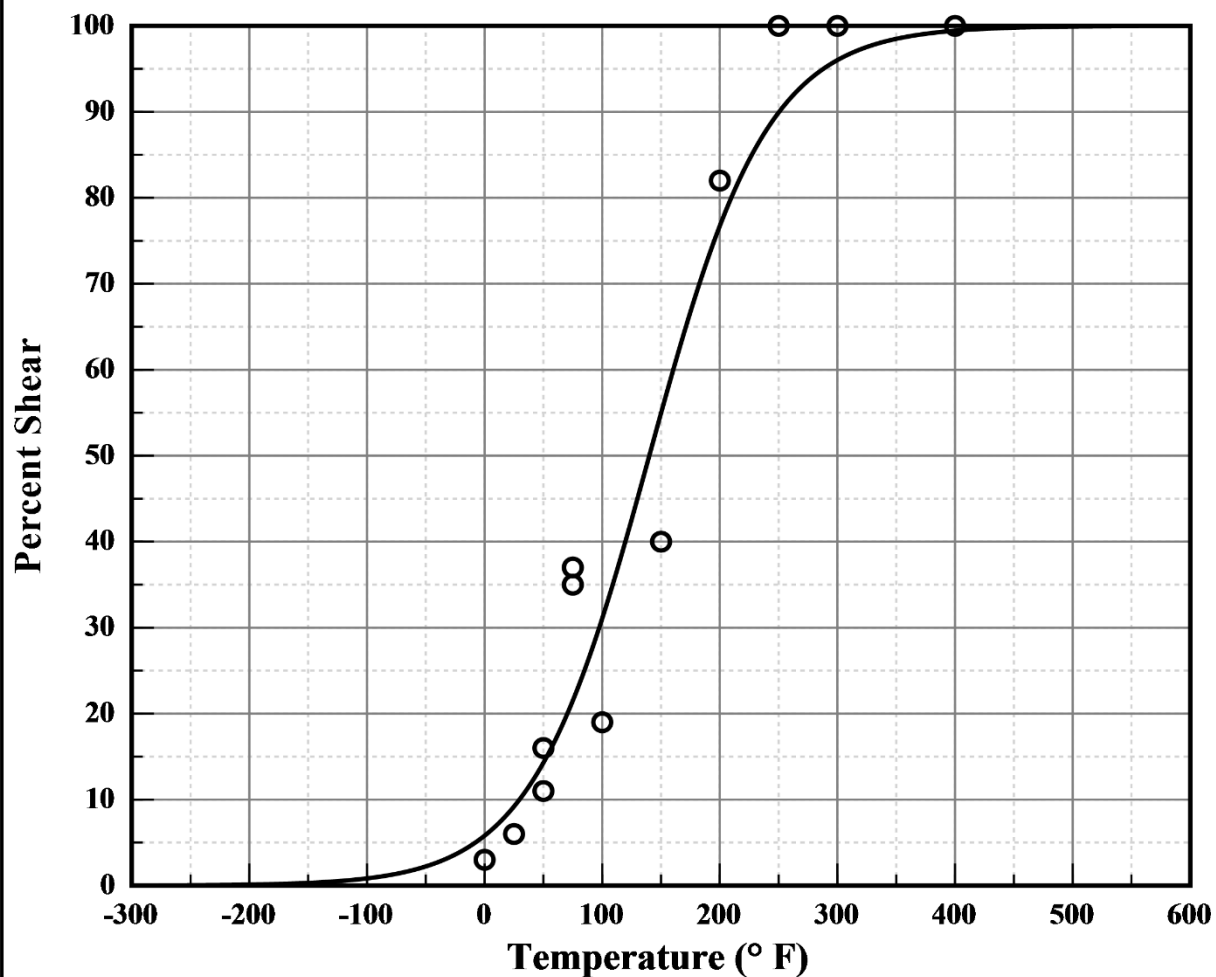
Lower Shelf %Shear = 0.00 (Fixed)

Temperature at 50% Shear = 140.10

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **R**

Heat: **21918/38566**
Fluence: **4.02E+019 n/cm²**



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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **R**

Heat: **21918/38566**
Fluence: **4.02E+019 n/cm²**

Capsule R Intermediate Shell Forging C (Axial)

Charpy V-Notch Data

Temperature (° F)	Input %Shear	Computed %Shear	Differential
0	3.0	5.8	-2.80
25	6.0	9.2	-3.20
50	16.0	14.3	1.71
50	11.0	14.3	-3.29
75	37.0	21.5	15.49
75	35.0	21.5	13.49
100	19.0	31.1	-12.07
150	40.0	54.9	-14.94
200	82.0	76.7	5.26
250	100.0	89.9	10.08
300	100.0	96.0	3.98
400	100.0	99.4	0.56

Capsule S Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/29/2021 8:31 AM

A = 50.00 B = 50.00 C = 83.40 T0 = 134.46 D = 0.00

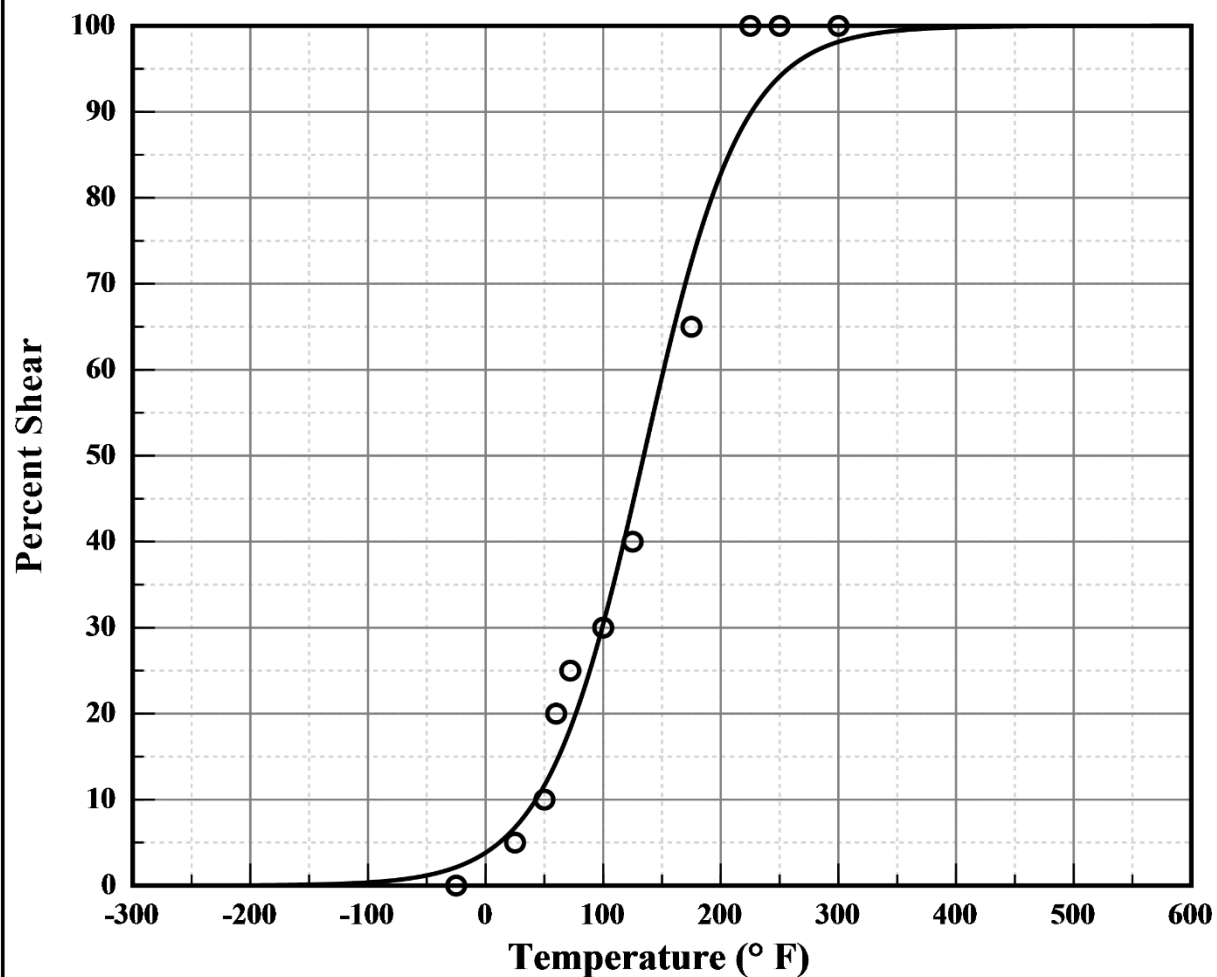
Correlation Coefficient = 0.991

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf %Shear = 100.00 (Fixed)

Lower Shelf %Shear = 0.00 (Fixed)

Temperature at 50% Shear = 134.50

Plant: **Prairie Island 1**
Orientation: **Axial**Material: **SA508CL3**
Capsule: **S**Heat: **21918/38566**
Fluence: **4.39E+019 n/cm²**

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Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **S**

Heat: **21918/38566**
Fluence: **4.39E+019 n/cm²**

Capsule S Intermediate Shell Forging C (Axial)
Charpy V-Notch Data

Temperature (° F)	Input %Shear	Computed %Shear	Differential
-25	0.0	2.1	-2.14
25	5.0	6.8	-1.75
50	10.0	11.7	-1.65
60	20.0	14.4	5.64
72	25.0	18.3	6.73
100	30.0	30.4	-0.44
125	40.0	44.4	-4.35
175	65.0	72.6	-7.56
225	100.0	89.8	10.24
250	100.0	94.1	5.89
300	100.0	98.1	1.85

Capsule N Intermediate Shell Forging C (Axial)

CVGraph 6.02: Hyperbolic Tangent Curve Printed on 6/23/2021 6:05 AM

A = 50.00 B = 50.00 C = 84.19 T0 = 174.24 D = 0.00

Correlation Coefficient = 0.959

Equation is $A + B * [\text{Tanh}((T-T_0)/(C+DT))]$

Upper Shelf %Shear = 100.00 (Fixed)

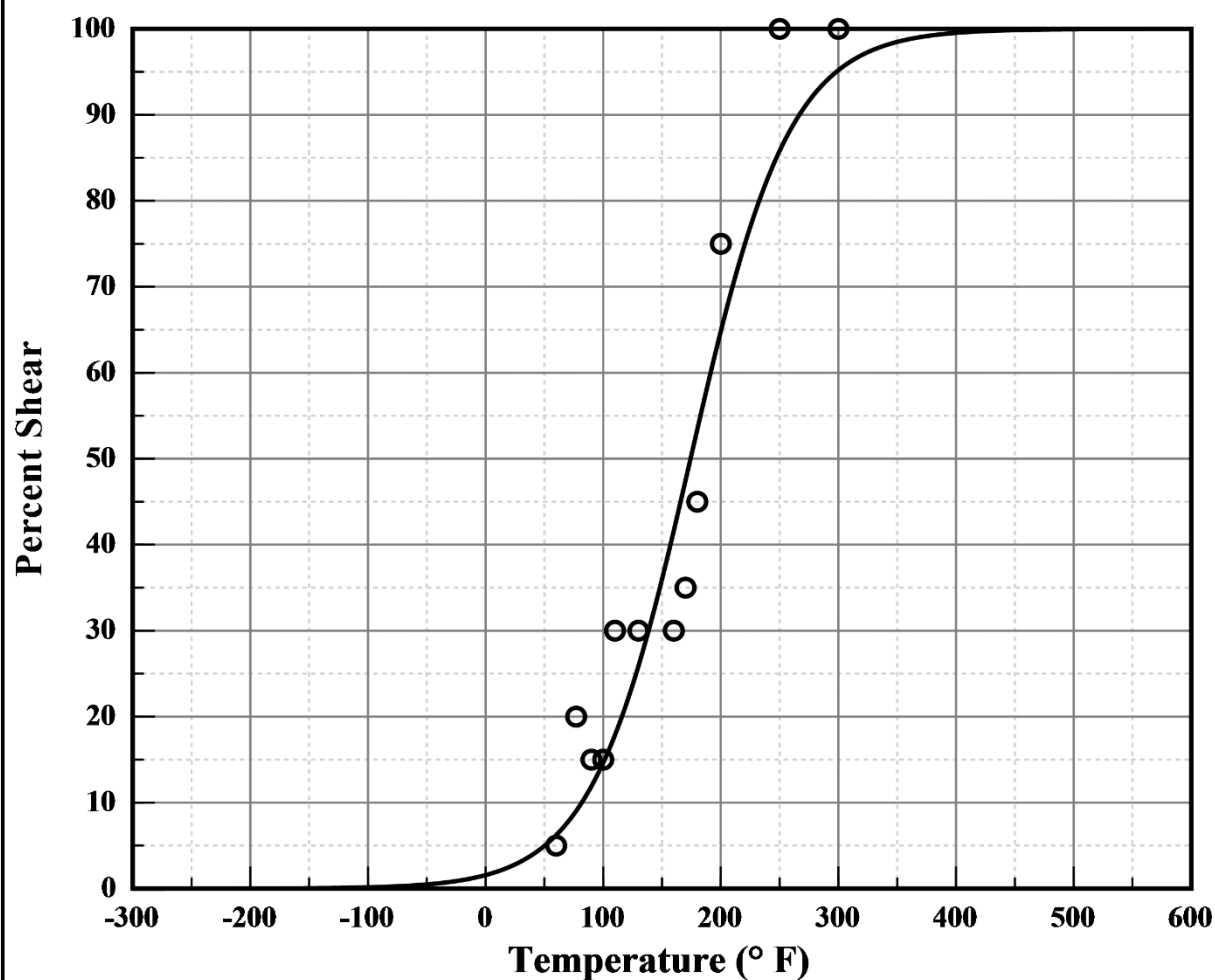
Lower Shelf %Shear = 0.00 (Fixed)

Temperature at 50% Shear = 174.30

Plant: **Prairie Island 1**
Orientation: **Axial**

Material: **SA508CL3**
Capsule: **N**

Heat: **21918/38566**
Fluence: **8.45E+019 n/cm²**



CVGraph 6.02

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