APPENDIX I

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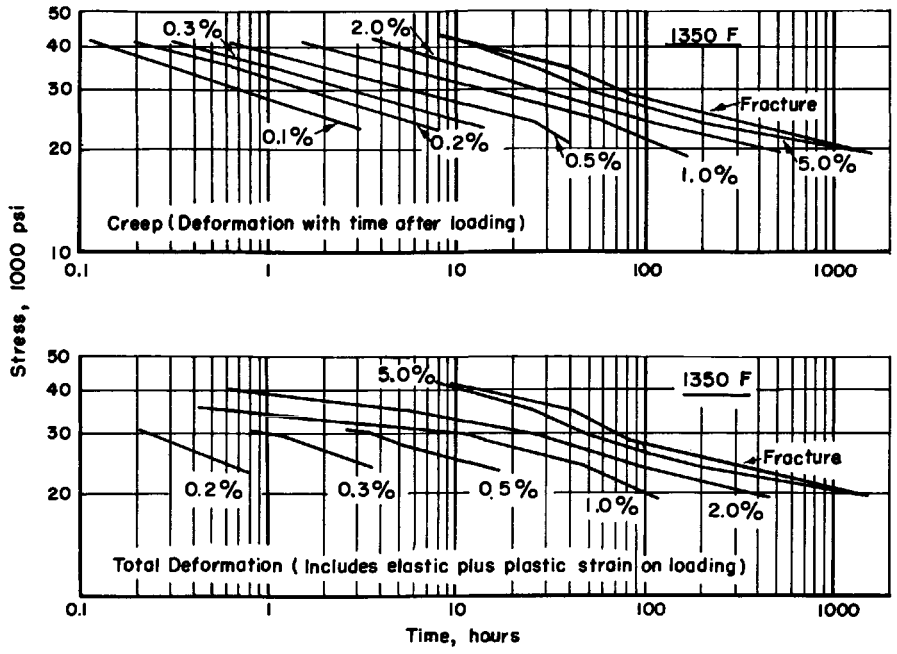
During recent years, a need has arisen for very short-time creep-rupture data. These data are necessary for the proper design of rocket motors, missiles, and to some extent supersonic aircraft. Some short-time creep-rupture data were available for three of the alloys included in this report, and these data are given in this appendix.

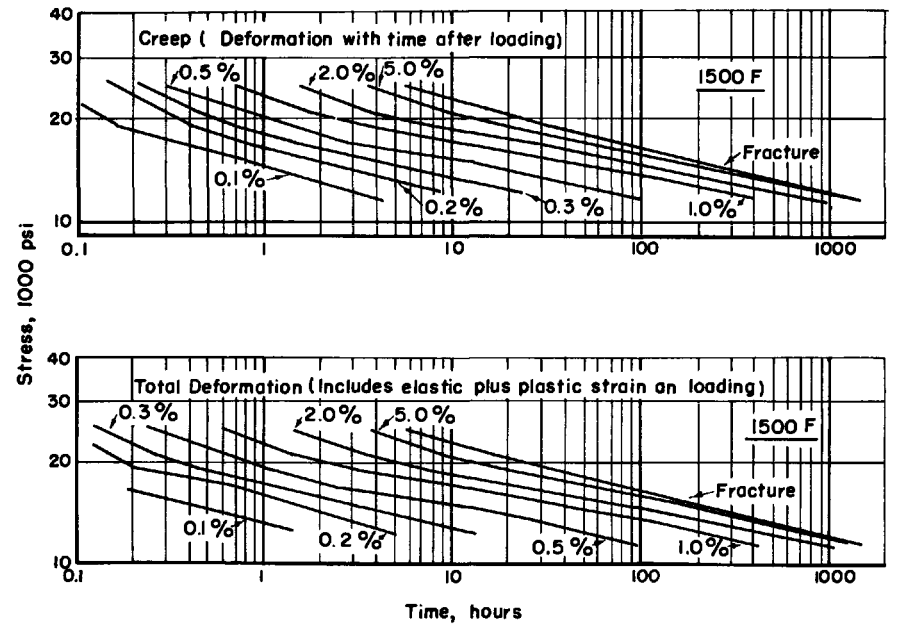
ALLOY DATA

Alloy	Source of Data	Chemical Composition, per cent												Sheet Thickness, in.	Heat Treatment	Room Temperature Hardness, Rockwell B
		Carbon	Manganese	Silicon	Chromium	Nickel	Cobalt	Molybdenum	Tungsten	Columbium	Titanium	Aluminum	Iron			
N-155.....	Cornell Aeronautical Laboratory	0.13	1.45	0.56	21.01	19.26	20.17	3.16	2.41	0.86	—	—	Balance	0.045	Annealed	89
Inconel "X"..	Cornell Aeronautical Laboratory	0.04	0.71	0.30	14.86	72.63	—	—	—	1.09	2.42	1.00	6.83	0.044	Annealed + 1550 F for 24 hr, + 1300 F for 20 hr	107 —
	Battelle Memorial Institute	0.04	0.47	0.35	15.17	73.14	—	—	—	1.00	2.43	0.79	6.52	0.062		106 —
Haynes Alloy No. 25	Cornell Aeronautical Laboratory	0.13	1.5	0.40	20.0	10.0	Balance	—	15	—	—	—	—	0.066	2200 F for 20 min, air cooled	96
Haynes Alloy No. 25	Battelle Memorial Institute	0.09	1.60	0.60	19.67	10.32	Balance	—	15.5	—	—	—	1.62	0.050	Hot rolled	—
Haynes Alloy No. 25	Battelle Memorial Institute	0.07	1.34	0.41	18.72	10.20	Balance	—	15.5	—	—	—	1.35	0.050	Annealed at 2275 F	—



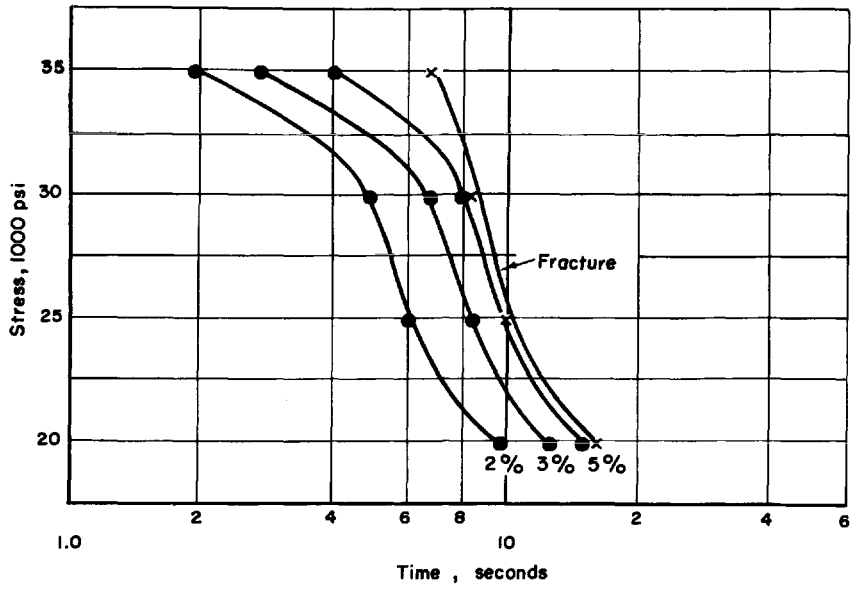
DESIGN CURVES FOR LOW CARBON N-155 ALLOY SHEET AT 1350 F

Cornell Aeronautical Laboratory, Inc.

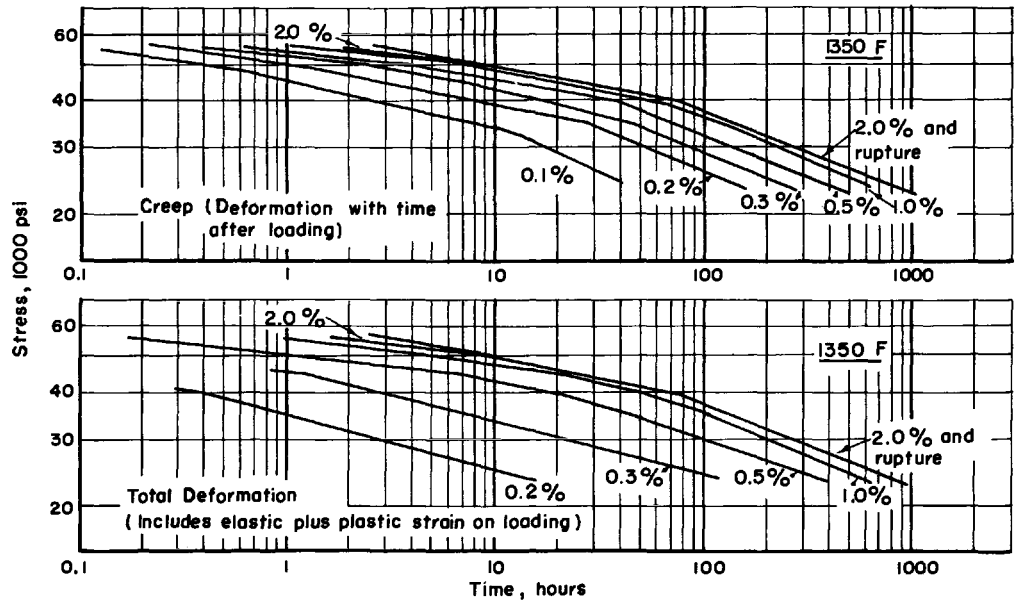


DESIGN CURVES FOR LOW CARBON N-155 ALLOY SHEET AT 1500F

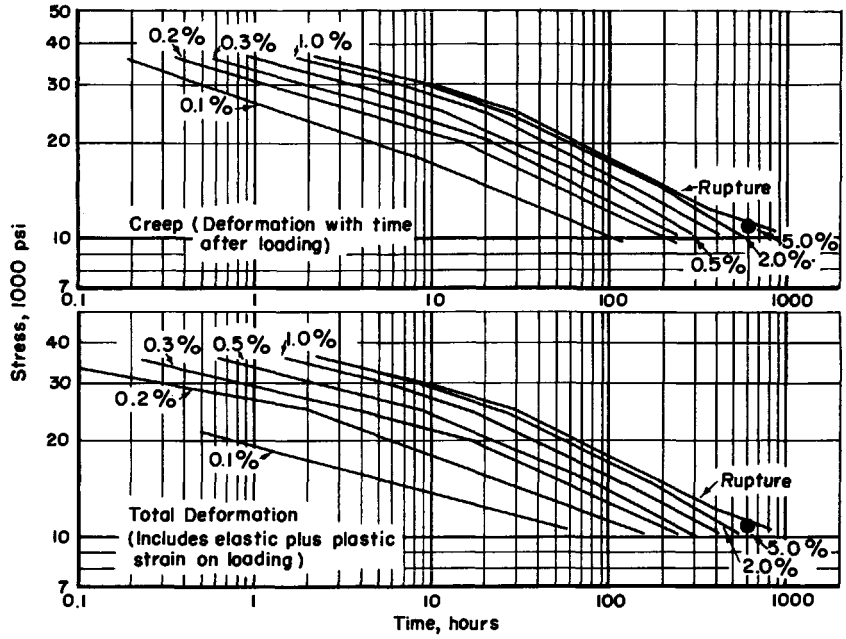
Cornell Aeronautical Laboratory, Inc.



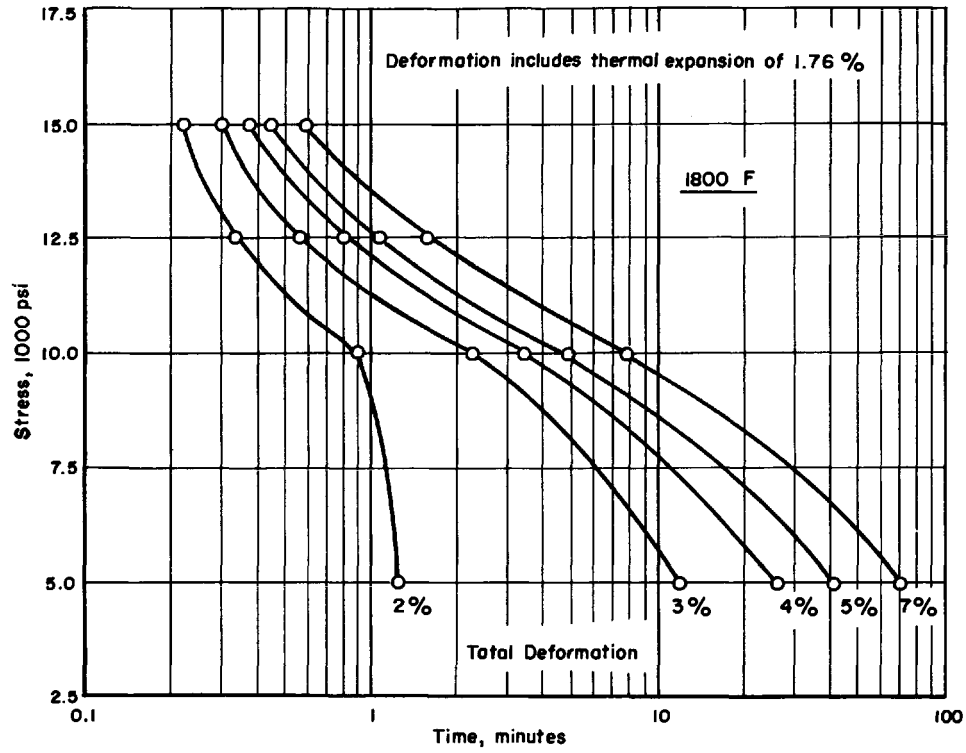
STRESS-TIME RELATIONSHIPS AT GIVEN STRAIN VALUES FOR INCONEL "X" AT 1800 F
Heating Rate, 1625 F per second; deformations include thermal expansion of 1.75 per cent
U.S. Naval Ordnance Test Station



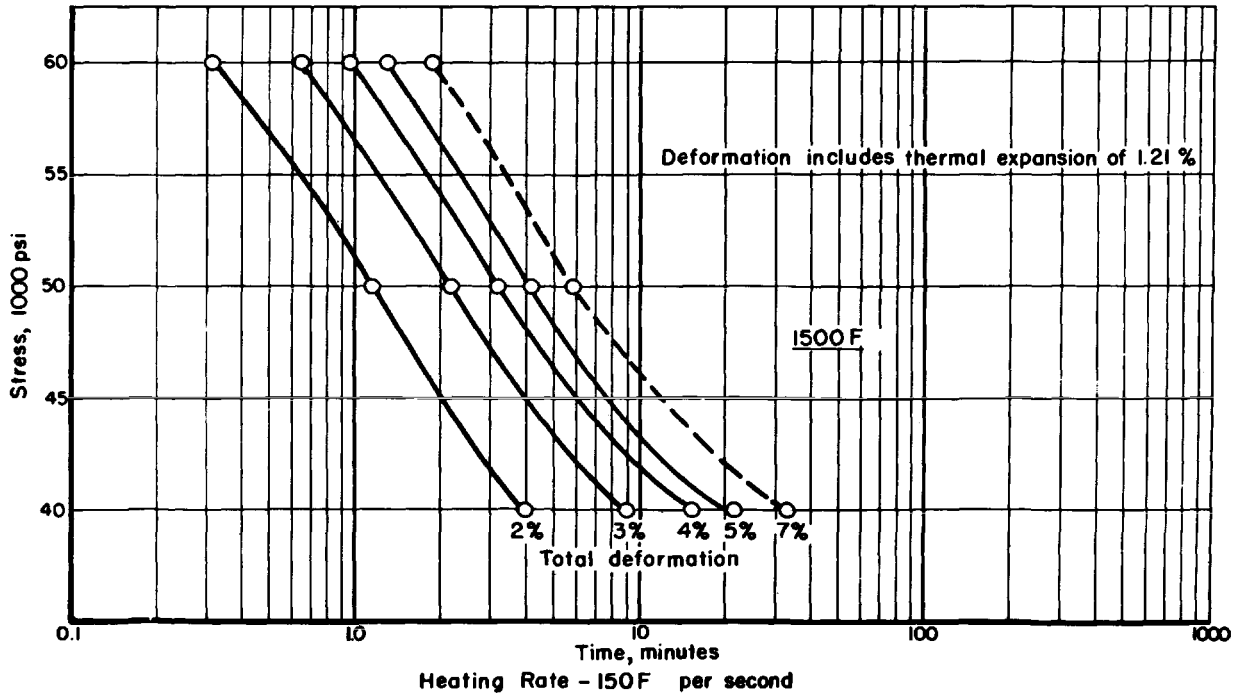
DESIGN CURVES FOR INCONEL "X" ALLOY SHEET AT 1350 F
Cornell Aeronautical Laboratory, Inc.

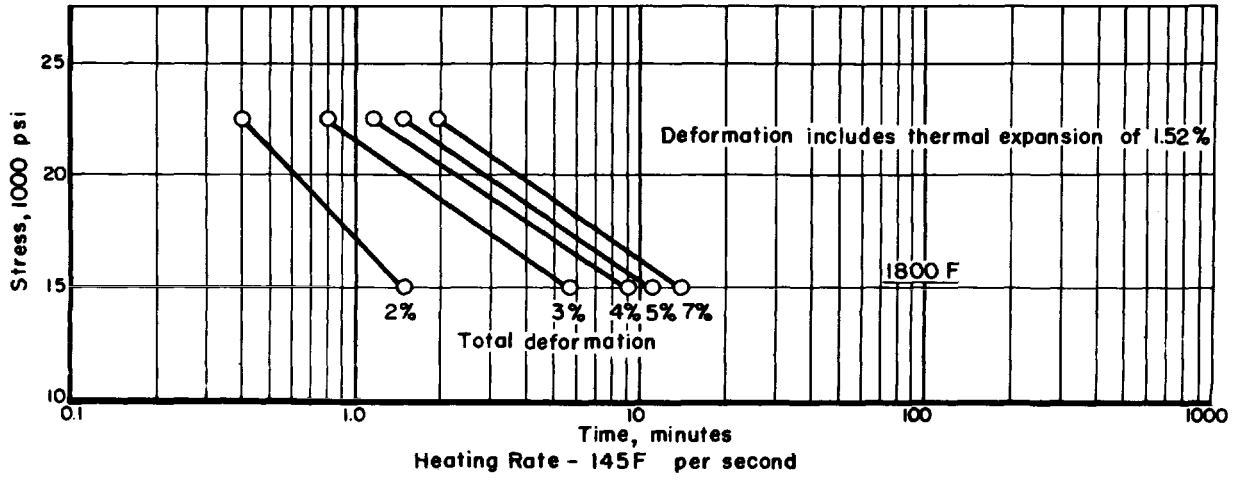


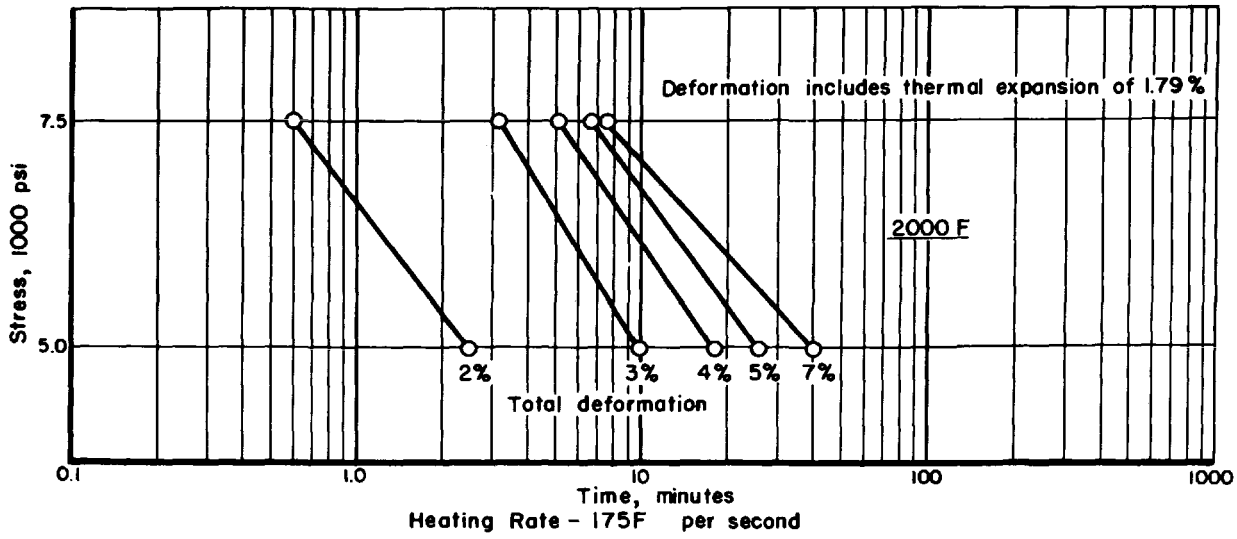
DESIGN CURVES FOR INCONEL "X" ALLOY SHEET AT 1500 F
Cornell Aeronautical Laboratory, Inc.



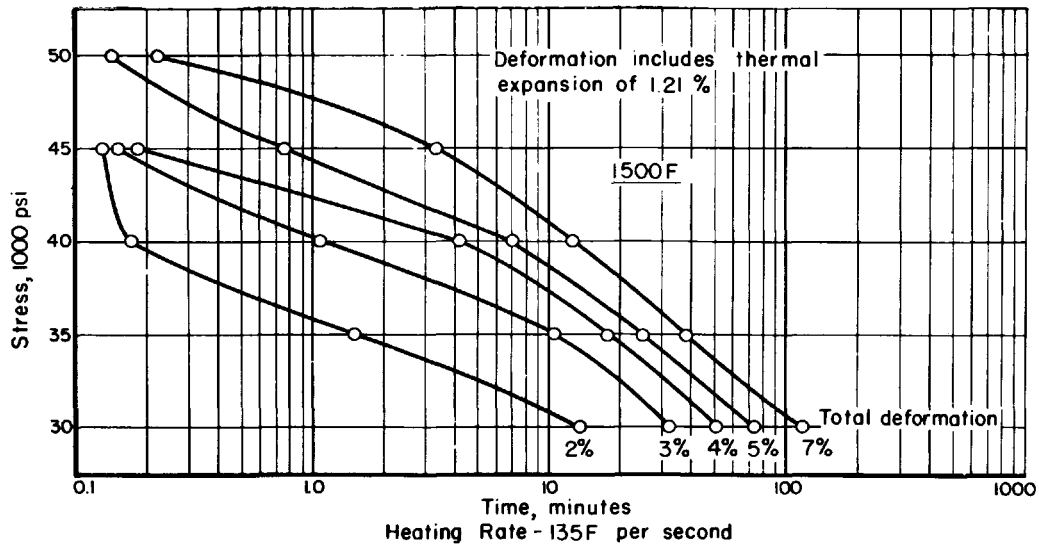
DESIGN CURVES FOR INCONEL "X" ALLOY SHEET AT 1800 F
Heating Rate, 125 F per second
Battelle Memorial Institute

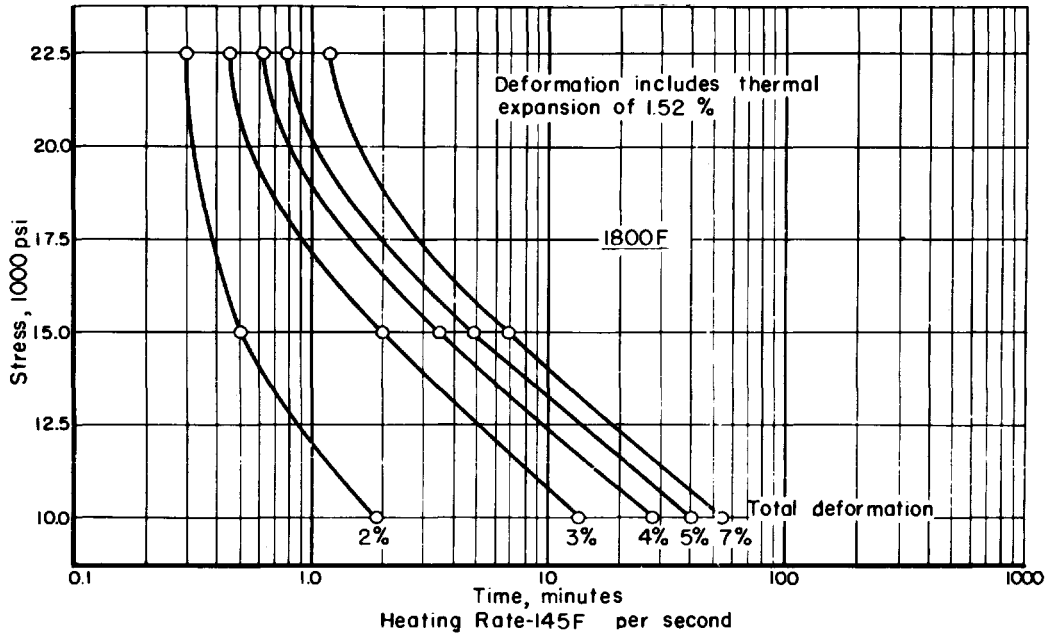


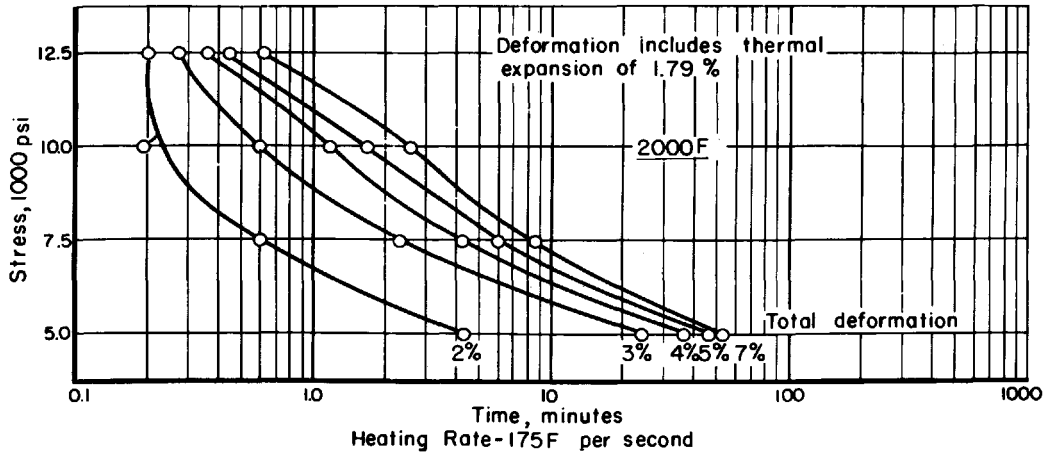




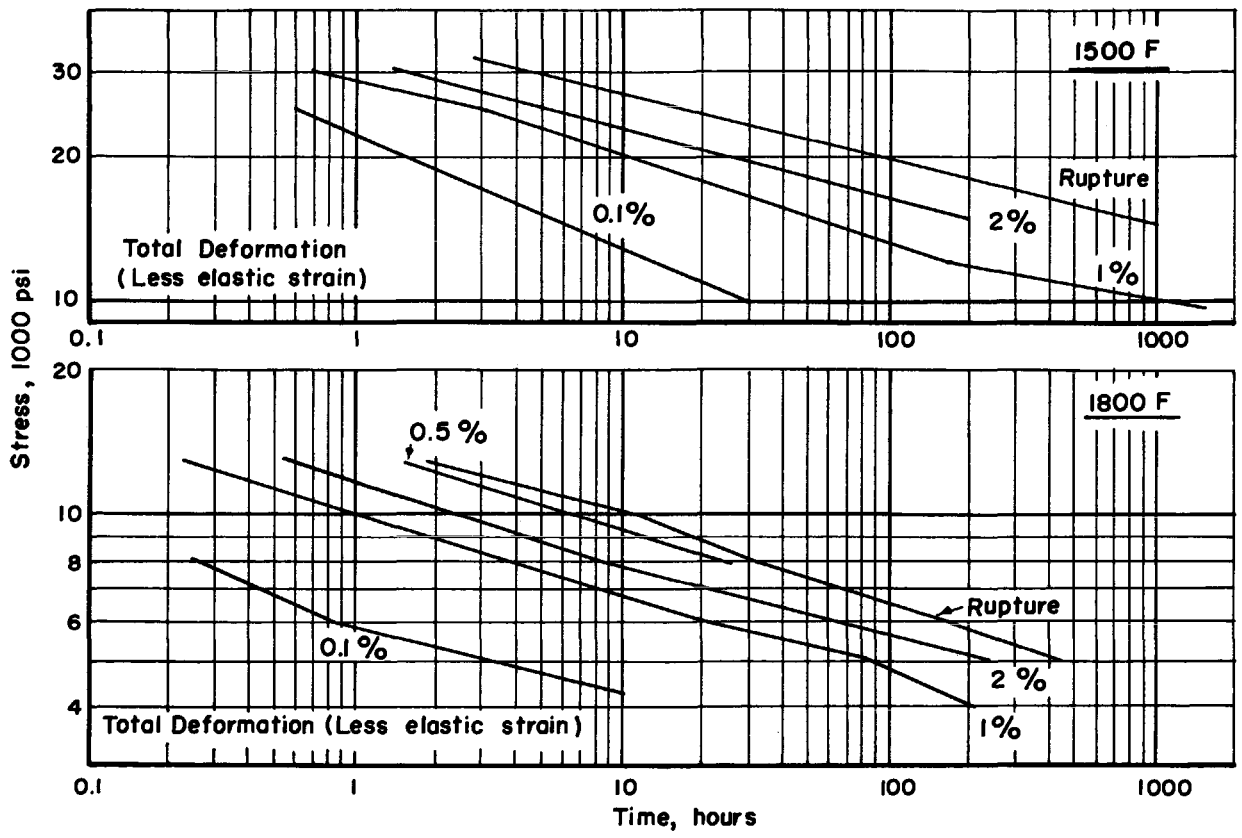
DESIGN CURVES FOR HOT-ROLLED HAYNES ALLOY NO. 25 SHEET AT 1500, 1800, AND 2000 F







DESIGN CURVES FOR ANNEALED HAYNES ALLOY NO. 25 SHEET AT 1500, 1800, AND 2000 F



DESIGN CURVES FOR HAYNES ALLOY NO. 25 SHEET AT 1500 AND 1800 F (2200 F FOR 20 MINUTES, AIR COOLED)

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