

Kaiser Aluminum & Chemical Sales, Inc.

General Sales Office, Palmolive Building, Chicago 11, Illinois

EXECUTIVE OFFICE, KAISER BUILDING, OAKLAND 12, CALIFORNIA

KAISER ALUMINUM SHADESCREEN*

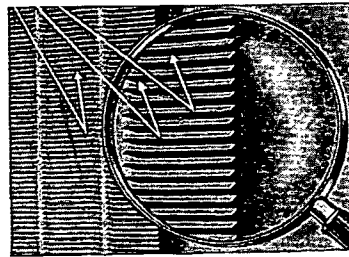
Functional—Attractive—Economical— Kaiser Aluminum ShadeScreen is a simple, attractive sun control device which screens out insects in addition to providing protection against excessive heat and glare. Combining function, attractiveness and economy, it permits new freedom of design—yet reduces both initial and operating costs.

Principle of ShadeScreen—ShadeScreen has 17.5 louvers per inch permanently tilted at a downward angle of 17° from the horizontal. Utilizing the baffle effect of the louver and the inherent reflectivity of aluminum, ShadeScreen stops and blocks the strongest, hottest rays of the sun—outside the window before they pass through the glass.

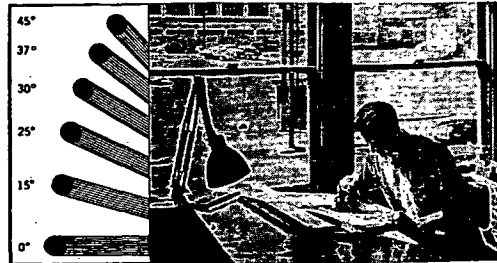
Reduces Air-Conditioning Capacity— New Buildings—With ShadeScreen excessive heat is not allowed to enter the interior—hence does not have to be removed. When designing air-conditioning systems for new buildings, the capacity of the equipment required may be considerably reduced by specifying Kaiser Aluminum ShadeScreen for windows.

Existing Buildings—Again, heat that does not enter a building does not have to be removed. The addition of Kaiser Aluminum ShadeScreen to existing air-conditioned buildings increases the efficiency of air-cooling equipment, thereby reducing operating costs.

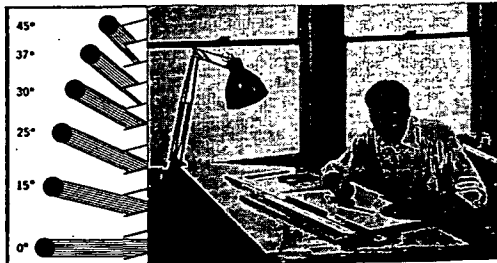
Admits Comfortable Diffused Light— Proper light level in work areas of schools, offices and factories makes visual tasks more comfortable; consequently more accurate and efficient. ShadeScreen blocks out most of the undesirable direct sunlight and glare and distributes only reflected and diffused light to the interior.



Sun's Heat Passes Through Unprotected Windows. Solar radiation penetrates window glass—releases considerable heat as rays strike floors, walls, furniture and inhabitants. Glare is annoying.



Shade Screen Blocks Direct Solar Radiation. Tiny louvers block strongest, hottest rays of the sun outside the window. Keep interiors cooler. Reduce glare.



* Patented.

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Typical Calculations of Air Conditioning Economies

10:00 A.M. Peak Load, 40° North Latitude			12:00 Noon Peak Load, 40° North Latitude			4:00 P.M. Peak Load, 40° North Latitude		
Instantaneous Heat Gain Btu/hr	Refrigeration Savings in Tons		Instantaneous Heat Gain Btu/hr	Refrigeration Savings in Tons		Instantaneous Heat Gain Btu/hr	Refrigeration Savings in Tons	
22 East Windows, 4' x 6'			22 East Windows, 4' x 6'			22 East Windows, 4' x 6'		
Unshaded Windows	72,336		Unshaded Windows	19,008		Unshaded Windows	16,368	
ShadeScreened Windows	18,480		ShadeScreened Windows	12,672		ShadeScreened Windows	12,144	
Heat Blocked by S.S.	53,856	4.49	Heat Blocked by S.S.	6,336	0.53	Heat Blocked by S.S.	4,224	0.35
18 South Windows, 4' x 6'			18 South Windows, 4' x 6'			18 South Windows, 4' x 6'		
Unshaded Windows	31,968		Unshaded Windows	48,384		Unshaded Windows	15,120	
ShadeScreened Windows	10,368		ShadeScreened Windows	16,416		ShadeScreened Windows	7,776	
Heat Blocked by S.S.	21,600	1.80	Heat Blocked by S.S.	31,968	2.66	Heat Blocked by S.S.	7,344	0.61
20 West Windows, 4' x 6'			20 West Windows, 4' x 6'			20 West Windows, 4' x 6'		
Unshaded Windows	11,520		Unshaded Windows	17,760		Unshaded Windows	109,440	
ShadeScreened Windows	6,240		ShadeScreened Windows	11,520		ShadeScreened Windows	35,040	
Heat Blocked by S.S.	5,280	0.44	Heat Blocked by S.S.	6,240	0.52	Heat Blocked by S.S.	74,400	6.20
Total Refrigeration Saved—6.73 tons			Total Refrigeration Saved—3.71 tons			Total Refrigeration Saved—7.16 tons		

Instantaneous Heat Gain—Btu/hr/sq ft (Ordinary Glass—Clear Atmosphere—August 1)

Exposure		Time of Day											
		6	7	8	9	10	11	Noon	1	2	3	4	5
East Window	unshaded	132	196	210	190	137	75	36	35	34	32	31	29
	ShadeScreened	54	61	52	43	35	28	24	23	23	23	22	18
West Window	unshaded	4	8	13	18	24	30	37	77	150	204	228	216
	ShadeScreened	2	3	6	9	13	18	24	36	48	60	73	83
South Window, 48° N. Lat.	unshaded	8	14	31	70	113	143	154	149	123	92	52	33
	ShadeScreened	2	5	11	20	30	37	42	44	43	38	30	28
South Window 44° N. Lat.	unshaded	7	12	25	58	95	123	134	130	108	79	50	32
	ShadeScreened	0	4	10	19	30	37	41	43	41	36	29	23
South Window 40° N. Lat.	unshaded	6	10	18	43	74	100	112	107	87	61	35	26
	ShadeScreened	4	8	17	24	32	38	40	39	34	28	18	13
South Window 36° N. Lat.	unshaded	6	10	20	38	65	87	97	94	78	57	38	20
	ShadeScreened	2	3	8	15	23	30	36	37	36	32	27	23
South Window 30° N. Lat.	unshaded	5	12	22	39	55	63	62	52	40	31	25	18
	ShadeScreened	3	8	13	21	28	33	35	34	32	27	23	17

These instantaneous heat gain measurements include *transmitted* direct solar radiation, plus the absorbed heat gained by convection and re-radiation, plus transmission of heat through the glass caused by inside-outside temperature differentials. Kaiser Aluminum ShadeScreen reflects more heat than other commonly used materials. Thus the screening itself remains cool and emits at a very low rate.

These factors of high reflectivity and low emissivity combine with the sun-blocking feature of ShadeScreen to produce cooler interior temperatures.

- ASHAE Research Report, "The Shading of Sunlit Glass—An analysis of the effect of Uniformly Spaced Flat Opaque Slats," by G. V. Parmelee and W. W. Aubele, June 1952.
- ASHAE Research Report, "The Shading of Sunlit Glass—An Experimental Study of Slit-Type Sun Shades," by G. V. Parmelee, W. W. Aubele, and D. J. Veld, October 1952.