

considered consistent with good practice, although there are boilers which have high efficiencies and also operate at higher transmission rates.

TESTING AND RATING CODES

The Society has adopted four solid fuel testing codes, a solid fuel rating code, and an oil fuel testing code.

ASHVE Standard and Short Form Heat Balance Codes for Testing Low-Pressure Steam Heating Solid Fuel Boilers—Codes 1 and 2—(Revision of June, 1929)¹, are intended to provide a method for conducting and reporting tests to determine heat efficiency and performance characteristics.

ASHVE Performance Test Code for Steam Heating Solid Fuel Boilers—Code No. 3—(Edition of 1929)¹ is intended for use with ASHVE Code for Rating Steam Heating Solid Fuel Hand-Fired Boilers². The object of this test code is to specify the tests to be conducted and to provide a method for conducting and reporting tests to determine the efficiencies and performance of the boiler.

The ASHVE Standard Code for Testing Steam Heating Boilers Burning Oil Fuel³, (Adopted June, 1932), is intended to provide a standard method for conducting and reporting tests to determine the heating efficiency and performance characteristics when oil fuel is used with steam heating boilers.

The ASHVE Standard Code for Testing Stoker-Fired Steam Heating Boilers⁴, (Adopted June, 1938), is intended to provide a test method for determining the efficiency and performance characteristics of any stoker and boiler combination burning any type of solid fuel such as anthracite or bituminous coal.

The *Steel Boiler Institute, Inc.* has adopted a Rating Code for Commercial Steel Boilers and Residential Steel Boilers and for Testing Oil-Fired Residential Steel Boilers (Fifth Edition as Revised Jan. 1 1948). The commercial boilers (defined as those having 129 to 2500 sq ft of heating

TABLE 1. SBI NET RATING DATA FOR RESIDENTIAL STEEL BOILERS—OIL FIRED*

SBI NET RATING			Minimum Furnace Volume Cu Ft	Heating Surface Sq Ft
Sq Ft Steam	Sq Ft Water	Btu		
275	440	66000	2.5	16
320	510	77000	2.9	19
400	640	96000	3.6	24
550	880	132000	5.0	32
700	1120	168000	6.4	41
900	1440	216000	8.2	53
1100	1760	264000	10.0	65
1300	2080	312000	11.8	77
1500	2400	360000	13.6	88
1800	2880	432000	16.4	106
2200	3520	528000	20.0	129
2600	4160	624000	23.6	153
3000	4800	720000	27.3	177

* Stoker-fired and Gas-fired SBI Net Rating not greater than Oil-fired. Hand-fired, SBI Net Rating (Steam) not greater than 14 times the square feet of heating surface.

TABLE 2. SBI RATINGS FOR COMMERCIAL STEEL BOILERS

MECHANICALLY FIRED												HAND FIRED				Flow Taps										
SBI Rating				SBI Net Rating				Heating Surface Sq Ft	Min- imum Furnace Height In.	Min- imum Furnace Volume Cu Ft	Min- imum Furnace Height In.	SBI Rating				SBI Net Rating				Min- imum Grade Area Sq Ft	Steam Outlet I.P.S.	Steam Return I.P.S.	Steam In.			
Sq Ft Steam	Sq Ft Water	Btu	Sq Ft Steam	Sq Ft Water	Btu	Sq Ft Steam	Sq Ft Water					Btu	Sq Ft Steam	Sq Ft Water	Btu	Sq Ft Steam	Sq Ft Water	Btu	Sq Ft Steam					Sq Ft Water	Btu	
2,190	3,500	526,000	1.800	2,880	432,000	15.7	26	15.7	26	15.7	26	1.800	2,880	432,000	1.500	2,400	360,000	7.9	6	3						
2,680	4,280	643,000	2.200	3,520	528,000	19.2	28	19.2	28	19.2	28	2,200	3,520	528,000	1,830	2,930	439,000	8.9	6	3						
3,160	5,050	758,000	2.600	4,160	624,000	22.6	29½	22.6	29½	22.6	29½	2,600	4,160	624,000	2,170	3,470	521,000	9.7	6	3						
3,650	5,840	876,000	3.000	4,800	720,000	26.1	29½	26.1	29½	26.1	29½	3,000	4,800	720,000	2,500	4,000	600,000	10.5	6	3						
4,250	6,800	1,020,000	3.500	5,600	840,000	30.4	30½	30.4	30½	30.4	30½	3,500	5,600	840,000	2,920	4,670	700,000	11.4	6	3						
4,860	7,770	1,166,000	4.000	6,400	960,000	34.8	30½	34.8	30½	34.8	30½	4,000	6,400	960,000	3,330	5,330	800,000	12.2	6	3						
5,470	8,750	1,313,000	4.500	7,200	1,080,000	39.1	31½	39.1	31½	39.1	31½	4,500	7,200	1,080,000	3,750	6,000	900,000	13.4	6	3						
6,080	9,720	1,459,000	5.000	8,000	1,200,000	43.5	31½	43.5	31½	43.5	31½	5,000	8,000	1,200,000	4,170	6,670	1,000,000	14.5	6	3						
7,290	11,660	1,750,000	6.000	9,600	1,440,000	52.1	32½	52.1	32½	52.1	32½	6,000	9,600	1,440,000	5,000	8,000	1,200,000	16.4	8	4						
8,500	13,600	2,040,000	7.000	11,200	1,680,000	60.8	34	60.8	34	60.8	34	7,000	11,200	1,680,000	5,830	9,330	1,400,000	18.1	8	4						
10,330	16,520	2,479,000	8.500	13,600	2,040,000	73.8	35½	73.8	35½	73.8	35½	8,500	13,600	2,040,000	7,080	11,330	1,700,000	20.5	8	4						
12,150	19,440	2,916,000	10.000	16,000	2,400,000	86.8	37½	86.8	37½	86.8	37½	10,000	16,000	2,400,000	8,330	13,330	2,000,000	22.5	8	4						
15,180	24,280	3,643,000	12.500	20,000	3,000,000	108.5	40½	108.5	40½	108.5	40½	12,500	20,000	3,000,000	10,420	16,700	2,500,000	25.6	8	4						
18,220	29,150	4,373,000	15.000	24,000	3,600,000	130.2	43	130.2	43	130.2	43	15,000	24,000	3,600,000	12,500	20,000	3,000,000	28.4	8	4						
21,250	34,000	5,106,000	17.500	28,000	4,200,000	151.8	46	151.8	46	151.8	46	17,500	28,000	4,200,000	14,580	23,330	3,500,000	30.9	8	4						
24,290	38,860	5,830,000	20.000	32,000	4,800,000	173.5	48½	173.5	48½	173.5	48½	20,000	32,000	4,800,000	16,670	26,670	4,000,000	33.2	8	4						
30,360	48,570	7,286,000	25.000	40,000	6,000,000	216.9	54½	216.9	54½	216.9	54½	25,000	40,000	6,000,000	20,830	33,330	5,000,000	37.4	10	6						
36,430	58,280	8,743,000	30.000	48,000	7,200,000	260.3	60½	260.3	60½	260.3	60½	30,000	48,000	7,200,000	25,000	40,000	6,000,000	41.2	10	6						
42,500	68,000	10,200,000	35.000	56,000	8,400,000	303.6	66	303.6	66	303.6	66	35,000	56,000	8,400,000	29,170	46,670	7,000,000	44.7	10	6						

* Oil, gas or bituminous stoker-fired coal. Minimum furnace volumes for anthracite, stoker-fired, are not specified in this code.

^b Bituminous, stoker-fired.

^c The tapping sizes shown for boilers having 129 to 600 sq ft of heating surface, inclusive are adequate for forced hot water.