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 Boilers.[2] 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 Fuel,[3] (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 Boilers,[4] (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 commerical boilers (defined as those having 129 to 2500 sq ft of heating

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

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

[a] 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 Tappings		
SBI Rating			*SBI* Net Rating			Minimum Furnace Volume Cu Ft[a]	Minimum Furnace Height[b] In.	Heating Surface Sq Ft	*SBI* Rating			*SBI* Net Rating			Minimum Grate Area Sq Ft	Steam Outlet I.P.S. In.	Steam Return I.P.S. 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			
2,190	3,500	526,000	1,800	2,880	432,000	15.7	26	129	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	158	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	29¼	186	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	215	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	30	250	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	286	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	31¼	322	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	31¾	358	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	32¾	429	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	500	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	608	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	715	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	40¼	893	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	1,072	15,000	24,000	3,600,000	12,500	20,000	3,000,000	28.4	8	4
21,250	34,000	5,100,000	17,500	28,000	4,200,000	151.8	46	1,250	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	48¾	1,429	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	1,786	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	2,143	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	2,500	35,000	56,000	8,400,000	29,170	46,670	7,000,000	44.7	10	6

[a] 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 500 sq ft of heating surface, inclusive are adequate for forced hot water.