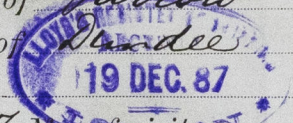


No. 15



# TESTS OF BOILER STEEL.

Tests of 134 Steel Bars manufactured by Palmer's Co of Barrow  
for Boiler No. 253 to be constructed by Brown & Hawse of London  
for Haverley



Date first visit 14<sup>th</sup> June last visit 27<sup>th</sup> June 1887 No. of visits 2

The Bars specified in the accompanying copy of Advice Notes were rolled from 22 charges. The tensile test has been applied to 22 samples as set forth below, and the temper and bending tests found satisfactory.

When a second test is applied, the result should be recorded immediately below the record of the original test. The number of plates or bars included in a rejection must be clearly stated.

No.	Purpose.	Charge Mark.	No. of plates or bars in same charge	Mark on plate and test piece.	Dimensions.			Ultimate Stress.		Exten. in 8 ins.	Remarks.
					Thickn.	Brdth.	Area.	Total.	Sq. Inch.		
					Ins.	Ins.	Ins.	Tons.	Tons.	%	
					<i>Dia</i>						
		<u>A424</u>	<u>487</u>		<u>1.14</u>	<u>1.02</u>		<u>27.8</u>	<u>27.2</u>	<u>29</u>	
		<u>433</u>	<u>501</u>		<u>.96</u>	<u>.723</u>		<u>18.9</u>	<u>26.1</u>	<u>27</u>	
		<u>449</u>	<u>513</u>		<u>1.08</u>	<u>.916</u>		<u>24.9</u>	<u>27.2</u>	<u>27</u>	
		<u>509</u>	<u>2503</u>		<u>1.07</u>	<u>.899</u>		<u>26.8</u>	<u>29.7</u>	<u>26</u>	
		<u>510</u>	<u>2506</u>		<u>1.18</u>	<u>1.09</u>		<u>29.7</u>	<u>27.2</u>	<u>28</u>	
		<u>511</u>	<u>2515</u>		<u>1.09</u>	<u>.933</u>		<u>26.3</u>	<u>28.2</u>	<u>24</u>	
		<u>B405</u>	<u>533</u>		<u>1.09</u>	<u>.933</u>		<u>26.8</u>	<u>28.7</u>	<u>24</u>	
		<u>411</u>	<u>565</u>		<u>1.09</u>	<u>.933</u>		<u>25.6</u>	<u>27.4</u>	<u>30</u>	
		<u>428</u>	<u>495</u>		<u>1.17</u>	<u>1.07</u>		<u>30.1</u>	<u>28.1</u>	<u>23</u>	
		<u>D364</u>	<u>36</u>		<u>1.13</u>	<u>1.00</u>		<u>27.2</u>	<u>27.2</u>	<u>27</u>	
		<u>369</u>	<u>31</u>		<u>1.13</u>	<u>1.00</u>		<u>27.8</u>	<u>27.8</u>	<u>27</u>	
		<u>372</u>	<u>50</u>		<u>1.10</u>	<u>.950</u>		<u>26.9</u>	<u>28.3</u>	<u>26</u>	
		<u>383</u>	<u>542</u>		<u>1.12</u>	<u>.985</u>		<u>26.6</u>	<u>27.0</u>	<u>23</u>	
		<u>387</u>	<u>534</u>		<u>1.14</u>	<u>1.02</u>		<u>28.3</u>	<u>27.7</u>	<u>28</u>	
		<u>435</u>	<u>517</u>		<u>1.10</u>	<u>.95</u>		<u>26.0</u>	<u>27.3</u>	<u>24</u>	
		<u>437</u>	<u>421</u>		<u>1.08</u>	<u>.916</u>		<u>24.9</u>	<u>27.2</u>	<u>26</u>	
		<u>444</u>	<u>1107</u>		<u>1.15</u>	<u>1.03</u>		<u>29.2</u>	<u>28.3</u>	<u>25</u>	
		<u>E386</u>	<u>510</u>		<u>1.14</u>	<u>1.02</u>		<u>29.5</u>	<u>28.9</u>	<u>24</u>	
		<u>387</u>	<u>508</u>		<u>1.10</u>	<u>.95</u>		<u>26.0</u>	<u>27.3</u>	<u>26</u>	
		<u>484</u>	<u>2509</u>		<u>1.13</u>	<u>1.00</u>		<u>30.0</u>	<u>30.0</u>	<u>21</u>	
		<u>488</u>	<u>2499</u>		<u>1.12</u>	<u>.985</u>		<u>29.0</u>	<u>29.4</u>	<u>22</u>	
		<u>492</u>	<u>2495</u>		<u>1.10</u>	<u>.950</u>		<u>28.5</u>	<u>30.0</u>	<u>25</u>	
<i>The following on being tested, found unsatisfactory and were rejected</i>											
		<u>A449</u>	<u>530</u>	<u>530</u>	<u>1.09</u>	<u>.933</u>		<u>29.6</u>	<u>31.7</u>	<u>12</u>	} <i>Rejected</i>
		<u>"</u>	<u>528</u>		<u>1.09</u>	<u>.933</u>		<u>24.1</u>	<u>25.8</u>	<u>28</u>	
		<u>E386</u>	<u>502</u>		<u>1.06</u>	<u>.882</u>		<u>23.9</u>	<u>27.1</u>	<u>19</u>	
		<u>B428</u>	<u>496</u>		<u>1.1</u>	<u>.95</u>		<u>23.0</u>	<u>24.0</u>	<u>14</u>	
		<u>A424</u>	<u>490</u>		<u>1.09</u>	<u>.933</u>		<u>27.8</u>	<u>29.7</u>	<u>16</u>	
		<u>D474</u>	<u>1106</u>		<u>1.15</u>	<u>1.03</u>		<u>34.4</u>	<u>33.4</u>	<u>19</u>	

Fee ..... £ : :

Expenses £ : :

£ : :

To be paid by

*J. Shilston.*

Surveyor, Lloyd's Register,

28/6/87 *Newcastle.*