Removing stains from brick

How to remove about 150 stains from clay brick masonry

By Clayford T. Grimm

Do you need to remove a stain from a clay brick masonry wall but don’t know what cleaner or cleaning method will work? The tables on the next few pages should help. They recommend more than 70 cleaners, 18 types of equipment, and 39 procedures for removing about 150 stains from clay brick masonry.

How to use the tables

Use Table 1 to find the type of stain you have. Types of stains are listed alphabetically in the first column. The second and third columns in Table 1 list the stain color and the type of brick the stain is on (rough, glazed, or unglazed).

The last three columns in Table 1 refer you to Tables 2, 3, and 4. These columns tell you what cleaners can be used to remove the stain (Table 2), what equipment is needed (Table 3), and how to apply the cleaner (Table 4).

For example, if you need to remove asphalt from unglazed brick masonry, look down the first column in Table 1 to the word asphalt. Go across to the fourth column and you’ll find two suggested cleaners: solvents or #146 in Table 2. In Table 2, Cleaner #146 is identified as trichloroethylene poultice in fuller’s earth.

For the equipment you’ll need, move over to the fifth column in Table 1. It refers you to #27 in Table 3, which lists vessel, trowel, and impervious cover for poultice paste.

The sixth column in Table 1 gives directions on how to apply the poultice, by referring you to #41 and #48 in Table 4. According to Direction #41 in Table 4, you mix and apply a 1/4-inch thickness of poultice, cover, let dry 24 hours, and scrape or brush off filler. Direction #48 instructs you to repeat the procedure as needed.

Editor’s note

The tables are reprinted with permission from Grimm’s 64-page booklet, Cleaning Masonry—A Review of the Literature, published November 1988. It is available for $10.00 (plus $2 shipping and handling) from the Construction Research Center, The University of Texas at Arlington, P.O. Box 19347, Arlington, Texas 78712.

The cleaning recommendations cited here and in the original booklet come from 108 published citations; the booklet gives the source of each recommendation. In five other tables in the booklet you’ll find recommendations for removing stains from concrete masonry, marble, limestone, concrete, and miscellaneous masonry materials. It also lists manufacturers of each chemical cleaner recommended in the tables and provides their addresses and telephone numbers.

Clayford T. Grimm is president of Clayford T. Grimm, P.E., Inc., a consulting architectural engineering firm dedicated to the design, construction, maintenance, and restoration of masonry. He also is a senior lecturer in architectural engineering at the University of Texas at Austin, Austin, Texas 78712.

TABLE 1 HOW TO REMOVE STAINS FROM CLAY BRICK

<table>
<thead>
<tr>
<th>Stain Type</th>
<th>Stain Color</th>
<th>Surface</th>
<th>Agent (Table 2)</th>
<th>Equipment (Table 3)</th>
<th>Operations (Table 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algae</td>
<td>Black</td>
<td>Any</td>
<td>129, 44, 89, or 134</td>
<td>6, 7, 14</td>
<td>35, 20, 2, 70, 20</td>
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<tr>
<td>Algae or Lichens</td>
<td>Black</td>
<td>Any</td>
<td>71 or 157 or 159</td>
<td>6, 7, 14</td>
<td>57, 38</td>
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<tr>
<td>Algae or Lichens</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>22 or 157</td>
<td>(6, 7,14) or 11</td>
<td>57 or 38</td>
</tr>
<tr>
<td>Animal</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>80</td>
<td>6, 7, 14</td>
<td>57</td>
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<tr>
<td>Animal, Bark, Wood</td>
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<td>Any</td>
<td>79</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Animal, Bark, Wood</td>
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<td>27 or 76</td>
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<td>57, 48</td>
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<td>Any</td>
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<td>Abrasion</td>
<td>22, 1</td>
<td>59</td>
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<tr>
<td>Asphalt</td>
<td>Black</td>
<td>Unglazed</td>
<td>146 or Solvents</td>
<td>27</td>
<td>41, 48</td>
</tr>
<tr>
<td>Bark, see Wood</td>
<td>Brown or Gray</td>
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<td>80</td>
<td>6, 7,14</td>
<td>57</td>
</tr>
<tr>
<td>Bitumen, Tar</td>
<td>Black</td>
<td>Unglazed</td>
<td>26 or 146 or 72 or 34</td>
<td>27</td>
<td>41</td>
</tr>
<tr>
<td>Bitumen, Tar</td>
<td>Black</td>
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<td>146 or Other Solvent</td>
<td>27</td>
<td>41, 48</td>
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<tr>
<td>Bronze, see Copper</td>
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<td>58</td>
<td>6, 7,14</td>
<td>57, 22</td>
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<td>Coal-tar Pitch</td>
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<td>146 or Solvents</td>
<td>27</td>
<td>41, 48</td>
</tr>
<tr>
<td>Copper or Bronze</td>
<td>Green or Brown</td>
<td>Unglazed</td>
<td>18</td>
<td>27</td>
<td>41, 48</td>
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<td>Copper or Bronze</td>
<td>Green, Muddy Brown</td>
<td>Any</td>
<td>18</td>
<td>27</td>
<td>41, 48, 47</td>
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</table>

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<table>
<thead>
<tr>
<th>Stain Type</th>
<th>Stain Color</th>
<th>Surface</th>
<th>Agent (Table 2)</th>
<th>Equipment (Table 3)</th>
<th>Operations (Table 4)</th>
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<tr>
<td>Copper or Bronze</td>
<td>Greenish Blue</td>
<td>Unglazed</td>
<td>11 + 4 Parts Talc</td>
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<td>Acetone</td>
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<td>6, 7, 14</td>
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<td>Detergent in Water</td>
<td>6, 7, 14</td>
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<td>Dirt, Dust, Grime</td>
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<td>Any</td>
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<td>6, 7, 14 or 27</td>
<td>57 or 41</td>
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<td>(6, 7, 14) or 11</td>
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<td>57, 48, 71, 22</td>
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<td>14, 27</td>
<td>41, 48, 72</td>
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<td>83 + 109</td>
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<td>Stain Type</td>
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<td>Equipment (Table 3)</td>
<td>Operations (Table 4)</td>
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<td>6, 7, 14</td>
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<td>Water</td>
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<td>Mortar</td>
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<td>Scouring Cleaner</td>
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<td>27 + (72, 26)</td>
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<td>Soap and Water</td>
<td>(14 or 15) 6, 7</td>
<td>29 + (52 or 72)</td>
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<td>Mortar/Red Brick</td>
<td>Gray</td>
<td>Unglazed</td>
<td>58</td>
<td>6, 7, 14</td>
<td>57</td>
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<td>Sanded</td>
<td>Water</td>
<td>14 or 15</td>
<td>52 or 72</td>
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<td>Unglazed</td>
<td>21, 159 or 71</td>
<td>6, 7, 14</td>
<td>57</td>
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<tr>
<td>Moss, see Fungi</td>
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<td>129, 44, 89 or 134</td>
<td>6, 7, 14</td>
<td>35, 20, 2, 70, 20</td>
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<td>6, 7, 14</td>
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<td>27</td>
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<td>146, 142, 153</td>
<td>27</td>
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<td>(152 or 106) + 158</td>
<td>27, 14</td>
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<td>50 or (26, 72 or 146)</td>
<td>(6, 7, 14) or 27</td>
<td>(57, 48) or 41</td>
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<td>Any</td>
<td>Fire</td>
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<td>Blow Torch</td>
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<td>Brown or Gray</td>
<td>Unglazed</td>
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<td>6, 7, 14</td>
<td>57</td>
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<td>Any</td>
<td>Ammonium Sulfate</td>
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<td>Any</td>
<td>56 or 78</td>
<td>27 or 6, 7, 14</td>
<td>(42 or 57) + 47</td>
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<td>Plants, see Fungi</td>
<td>Brown</td>
<td>Any</td>
<td>56 or 124</td>
<td>27, 14</td>
<td>41, 72, 48, 47</td>
</tr>
<tr>
<td>Plants, see Vegetation</td>
<td>Brown</td>
<td>Unglazed</td>
<td>76</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Rust</td>
<td>Brown</td>
<td>Any</td>
<td>75 + 16</td>
<td>6, 7, 14</td>
<td>57, 19, 47</td>
</tr>
<tr>
<td>Rust</td>
<td>Red, Rust, Brown</td>
<td>Any</td>
<td>56 or 124</td>
<td>27, 14</td>
<td>41, 72, 48, 47</td>
</tr>
<tr>
<td>Rust</td>
<td>Brown</td>
<td>Unglazed</td>
<td>76</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Rust, Heavy</td>
<td>Brown</td>
<td>Unglazed</td>
<td>76,114</td>
<td>6, 7, 14, 27</td>
<td>57, 48, 42</td>
</tr>
<tr>
<td>Rust, Iron, Steel</td>
<td>Brown or Red</td>
<td>Unglazed</td>
<td>Phosphoric Acid, 5%</td>
<td>6, 7, 14</td>
<td>57, 48, 47, 22</td>
</tr>
<tr>
<td>Rust, Iron, Steel</td>
<td>Brown or Red</td>
<td>Unglazed</td>
<td>82 + 107</td>
<td>6, 7, 14</td>
<td>57, 71, 47</td>
</tr>
<tr>
<td>Scum</td>
<td>Grayish White</td>
<td>Unglazed</td>
<td>88</td>
<td>Fiber Brush</td>
<td>2</td>
</tr>
<tr>
<td>Scum</td>
<td>White</td>
<td>Unglazed</td>
<td>22</td>
<td>6, 7, 14</td>
<td>59</td>
</tr>
<tr>
<td>Smoke or Soot</td>
<td>Black</td>
<td>Any</td>
<td>Scouring Cleaner</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Smoke or Soot</td>
<td>Black or Gray</td>
<td>Unglazed</td>
<td>Soap and Water</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Smoke or Soot</td>
<td>Black or Gray</td>
<td>Unglazed</td>
<td>99</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Smoke or Soot</td>
<td>Black or Gray</td>
<td>Unglazed</td>
<td>146</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Smoke, see Dirt</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>50 Mixed with Steam</td>
<td>6, 7, 14, 5</td>
<td>15</td>
</tr>
<tr>
<td>Straw</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>80</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Straw or Paper</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>27</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Tar</td>
<td>Black</td>
<td>Any</td>
<td>50 Mixed with Steam</td>
<td>6, 7, 14, 5</td>
<td>15</td>
</tr>
</tbody>
</table>
# Table 1: How to Remove Stains from Clay Brick

<table>
<thead>
<tr>
<th>Stain Type</th>
<th>Stain Color</th>
<th>Surface</th>
<th>Agent (Table 2)</th>
<th>Equipment (Table 3)</th>
<th>Operations (Table 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tar</td>
<td>Black</td>
<td>Any</td>
<td>None</td>
<td>16, 18, 6, 7, 14</td>
<td>39, 72</td>
</tr>
<tr>
<td>Tar, see Bitumen</td>
<td>Black</td>
<td>Any</td>
<td>Emulsifying</td>
<td>6, 7, 14, 24, 27</td>
<td>49, 57, 41</td>
</tr>
<tr>
<td>Timber or Wood</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>20g Oxalic Acid/L Water</td>
<td>6, 7, 14</td>
<td>57, 22</td>
</tr>
<tr>
<td>Tobacco</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>80</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Tobacco, Flowers</td>
<td>Brown or Gray</td>
<td>Any</td>
<td>27 or (75 + 16)</td>
<td>6, 7, 14</td>
<td>57, 48</td>
</tr>
<tr>
<td>Tobacco, Flowers</td>
<td>Brown or Gray</td>
<td>Any</td>
<td>79</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Urine</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>80</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Vanadium</td>
<td>Brown, Green, Yellow</td>
<td>Unglazed</td>
<td>(84 to 85) + 109</td>
<td>6, 7, 14</td>
<td>8, 13, 22</td>
</tr>
<tr>
<td>Vanadium</td>
<td>Brown, Green, Yellow</td>
<td>Unglazed</td>
<td>121 + 109</td>
<td>6, 7, 14</td>
<td>8, 13</td>
</tr>
<tr>
<td>Vanadium</td>
<td>Brown, Green, Yellow</td>
<td>Unglazed</td>
<td>110 or 105 or 138</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Vegetation</td>
<td>Black</td>
<td>Any</td>
<td>71 or 157 or 159</td>
<td>6, 7, 14</td>
<td>57, 38</td>
</tr>
<tr>
<td>Vegetation</td>
<td>Black</td>
<td>Any</td>
<td>129, 44, 99 or 134</td>
<td>6, 7, 14</td>
<td>35, 20, 2, 70, 20</td>
</tr>
<tr>
<td>Vines or Creepers</td>
<td>Brown or Gray</td>
<td>Any</td>
<td>22 or 157</td>
<td>(6, 7, 14) or 11</td>
<td>57, 48</td>
</tr>
<tr>
<td>Wax, see Crayon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>57</td>
</tr>
<tr>
<td>Welding Splatter</td>
<td>Orange, Red, Rust</td>
<td>Unglazed</td>
<td>56 or 19</td>
<td>6, 7, 14, 27</td>
<td>41, 72, 48, 47</td>
</tr>
<tr>
<td>Welding Splatter</td>
<td>Brown, Red, Rust</td>
<td>Any</td>
<td>76</td>
<td>6, 7, 14, 1</td>
<td>9, 62, or 20</td>
</tr>
<tr>
<td>Welding Splatter</td>
<td>Brown</td>
<td>Any</td>
<td>56 or 78</td>
<td>27 or (6, 7, 14)</td>
<td>42 or 57</td>
</tr>
<tr>
<td>Wood</td>
<td>Brown</td>
<td>Unglazed</td>
<td>77</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
<tr>
<td>Wood, see Animal</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>76</td>
<td>6, 7, 14</td>
<td>57, 48</td>
</tr>
<tr>
<td>Wood, see Animal</td>
<td>Brown or Gray</td>
<td>Unglazed</td>
<td>80</td>
<td>6, 7, 14</td>
<td>57</td>
</tr>
</tbody>
</table>

# Table 2: Masonry Cleaning Agents

2. Acetic acid (80% or stronger), 1 part, and 1 part by drogen peroxide (30% to 35%) in 6 parts water.

10. Alkaline solution, mild (Soapless. No grease or lye. Use washing soda, i.e. sodium carbonate).

11. Aluminum chloride.

13. Ammonia, 5%.

16. Ammonium bifluoride, ½ pound.

18. Ammonium chloride, 1 part in 4 parts whiting or pow dered talc, attapulgite clay, or sepiolite clay poultice.

19. Ammonium citrate, 1 part + 6 parts warm water + 7 parts limefree glyc erine.


22. Ammonium sulfate.

26. Benzene poultice in fuller’s earth.

27. Bleach, household, = sodium hypochlorite = Chlorox = Javelle water.

34. Carbon tetrachloride in fuller’s earth poultice.

44. Copper sulfate, 2 ounces in 1 gallon water.

45. Copper sulfate, 15 grams/liter of water.

47. Detergent, laundry, in warm water.

49. Efflorescence may occur

50. Emulsifying agent in water.

51. Ethylene diamine tetraacetic acid, 1 part in 10 parts water.

52. Formaldehyde (40% solution in water), 125 milliliters/liter of water.

54. Gasoline, white (unleaded).

55. Gasoline, white (unleaded), poultice in fuller’s earth.

56. Glycerine, lime-free, 7 parts + 1 part sodium citrate in 6 parts warm water in poultice.

58. Hydrochloric acid, 1 part in 9 parts water.

59. Hydrochloric acid, 1 part in 12 parts water

60. Hydrochloric acid, 1 part in 20 parts water.

71. Magnesium silicofluoride, 1 part in 40 parts water by weight.

72. Naptha poultice.

74. Oxalic acid, saturated in aqueous solution.

75. Oxalic acid crystals, 1 pound in 1 gallon water.

76. Oxalic acid crystals, 1 pound, in 1 gallon water with ½ pound ammonium bifluoride.

77. Oxalic acid crystals, 2 teaspoonsful in 1 pint warm water.

78. Oxalic acid, 1 part in 10 parts water.

79. Oxalic acid, 1 part in 40 parts hot water.
80. Oxalic acid, 3 ounces in 1 gallon water.
81. Oxalic acid, 3 to 6 ounces in 1 gallon warm water.
82. Oxalic acid, 8 ounces + 3 ounces sodium fluoride + 15 grams citric acid in 1 gallon water.
83. Oxalic acid, 50 grams + 20 sodium fluoride + 15 grams citric acid/liter of preferably warm water.
84. Oxalic acid, 20 grams/liter of preferably warm water.
85. Oxalic acid, 40 grams/liter of water.
86. Paint remover, commercial.
87. Paraffin.
88. Paraffin oil 10% to 25%, in varsol.
89. Phenylmercuric acetate, 1 part in 10 parts water.
90. Potassium silicate, 1 pound in 1 gallon water.
91. Scouring powder containing bleach.
92. Soda, caustic (Drano® = sodium hydroxide), 1 pound/gallon water.
93. Soda, caustic (Drano® = sodium hydroxide), 1 part in 10 parts water.
94. Soda, caustic (Drano® = sodium hydroxide), 5% solution in poultice.
95. Soda, washing (sodium carbonate), 2 ounces in 1 gallon water.
96. Soda, washing (sodium carbonate), 1 pound in 1 gallon water.
97. Soda, washing (sodium carbonate), 10 grams/liter of water.
98. Soda, washing (sodium carbonate), 100 grams/liter of water.
99. Sodium bicarbonate = soda ash = washing soda.
100. Sodium carbonate = soda ash = washing soda.
101. Sodium citrate, 1 part in 6 parts warm water + 7 parts limefree glycerine in attapulgite clay or whiting poultice.
102. Sodium hexametaphosphate, 5%, + 3% citric acid + 0.1% sodium laurylthtersulfate tp ph = 3.
103. Sodium hypochlorite (household bleach = Chlorox® = Javelle water) full strength.
104. Sodium hydrosulfate in talc poultice.
105. Sodium pentachlorophenate, 1 part in 30 parts water.
106. Sodium pentachlorophenate (50% solution in water), 40-50 milliliter/liter of water.
107. Sodium salicylamide, 1.5 ounces in 1 gallon water.
108. Sodium silicate (water glass), 1 pound in 1 gallon water.
109. Sodium silicate (water glass), 100 grams/liter of water.
110. Sodium trichlorophenate, 40% solution in water.
111. Sodium hypochlorite (household bleach = Chlorox® = Javelle water) full strength.
112. Sodium silicate (water glass), 100 grams/liter of water.
113. Sodium trichlorophenate, 40% solution in water.
114. Sodium hexametaphosphate, 5%, + 3% citric acid + 0.1% sodium laurylthtersulfate tp ph = 3.
115. Sodium hypochlorite (household bleach = Chlorox® = Javelle water) full strength.
116. Sodium hydrosulfate in talc poultice.
117. Sodium pentachlorophenate, 1 part in 30 parts water.
118. Sodium pentachlorophenate (50% solution in water), 40-50 milliliter/liter of water.
119. Sodium salicylamide, 1.5 ounces in 1 gallon water.
120. Sodium silicate (water glass), 1 pound in 1 gallon water.
121. Sodium silicate (water glass), 100 grams/liter of water.
122. Sodium trichlorophenate, 40% solution in water.
123. Sodium hypochlorite (household bleach = Chlorox® = Javelle water) full strength.
124. Sodium hydrosulfate in talc poultice.
125. Sodium pentachlorophenate, 1 part in 30 parts water.
126. Sodium pentachlorophenate (50% solution in water), 40-50 milliliter/liter of water.
127. Sodium salicylamide, 1.5 ounces in 1 gallon water.
128. Sodium silicate (water glass), 1 pound in 1 gallon water.
129. Sodium silicate (water glass), 100 grams/liter of water.
130. Sodium trichlorophenate, 40% solution in water.
131. Sodium hydrosulfate in talc poultice.
132. Sodium pentachlorophenate, 1 part in 30 parts water.
133. Sodium pentachlorophenate (50% solution in water), 40-50 milliliter/liter of water.
134. Sodium salicylamide, 1.5 ounces in 1 gallon water.
135. Sodium silicate (water glass), 1 pound in 1 gallon water.
136. Sodium silicate (water glass), 100 grams/liter of water.
137. Sodium trichlorophenate, 40% solution in water.
138. Sodium hydrosulfate in talc poultice.
139. Sodium pentachlorophenate, 1 part in 30 parts water.
140. Sodium pentachlorophenate (50% solution in water), 40-50 milliliter/liter of water.
141. Sodium salicylamide, 1.5 ounces in 1 gallon water.
142. Sodium silicate (water glass), 1 pound in 1 gallon water.
143. Sodium trichlorophenate, 40% solution in water.
144. Sodium hypochlorite (household bleach = Chlorox® = Javelle water) full strength.
145. Sodium hydrosulfate in talc poultice.
146. Sodium pentachlorophenate, 1 part in 30 parts water.
147. Sodium pentachlorophenate (50% solution in water), 40-50 milliliter/liter of water.
148. Sodium salicylamide, 1.5 ounces in 1 gallon water.
149. Sodium silicate (water glass), 1 pound in 1 gallon water.
150. Sodium trichlorophenate, 1 part in 6 parts water.
151. Sodium hydrosulfate in talc poultice.
152. Sodium pentachlorophenate, 1 part in 30 parts water.
153. Sodium pentachlorophenate (50% solution in water), 40-50 milliliter/liter of water.
154. Sodium salicylamide, 1.5 ounces in 1 gallon water.
155. Sodium silicate (water glass), 1 pound in 1 gallon water.
156. Sodium trichlorophenate, 1 part in 6 parts water.
157. Sodium hydrosulfate in talc poultice.
158. Sodium pentachlorophenate, 1 part in 30 parts water.
159. Sodium trichlorophenate, 40% solution in water.
160. Sodium hypochlorite (household bleach = Chlorox® = Javelle water) full strength.

NOTE: The chemicals mentioned here are described further in Table 10 of the original booklet.

### TABLE 3  EQUIPMENT FOR CLEANING MASONRY

| 1. Auxiliary equipment | 15. Hose with spray nozzle for water at high pressure. |
| 3. Boiler for water or hot water source | 17. Knife or razor. |
| 6. Chisel | 20. Sand (or other abrasive) blasting equipment. |
| 9. Hose with spray nozzle for water at normal pressure | 23. Vessel, trowel, and impervious cover for poultice paste. |

Note: Safety equipment is not listed in this table. Consult the Material Safety Data Sheet available from the chemical manufacturer for each chemical used.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Allow to soften and scrape off.</td>
</tr>
<tr>
<td>2.</td>
<td>Apply agent.</td>
</tr>
<tr>
<td>7.</td>
<td>Apply first agent, if dry rub or light abrasion fails.</td>
</tr>
<tr>
<td>8.</td>
<td>Apply first agent.</td>
</tr>
<tr>
<td>11.</td>
<td>Apply hot water under pressure.</td>
</tr>
<tr>
<td>13.</td>
<td>Apply second agent.</td>
</tr>
<tr>
<td>15.</td>
<td>Apply steam or hot water under pressure.</td>
</tr>
<tr>
<td>18.</td>
<td>Apply with sponge.</td>
</tr>
<tr>
<td>19.</td>
<td>Avoid etching.</td>
</tr>
<tr>
<td>22.</td>
<td>Consult brick manufacturer before applying any agent to light-colored, brown brick, or sand-lime (calcium silicate) brick.</td>
</tr>
<tr>
<td>26.</td>
<td>Do not sand blast.</td>
</tr>
<tr>
<td>27.</td>
<td>Do not scrub.</td>
</tr>
<tr>
<td>29.</td>
<td>Do not use hydrochloric acid.</td>
</tr>
<tr>
<td>31.</td>
<td>Do not use on manganese brick.</td>
</tr>
<tr>
<td>32.</td>
<td>Do not use on smooth, light colored clay masonry units, i.e. white, tan, bluff, or gray brick.</td>
</tr>
<tr>
<td>35.</td>
<td>Dry surface.</td>
</tr>
<tr>
<td>38.</td>
<td>Follow agent manufacturer’s directions.</td>
</tr>
<tr>
<td>39.</td>
<td>Freeze with ice and chip or cut off with razor blade or knife.</td>
</tr>
<tr>
<td>40.</td>
<td>Mix agent with whiting.</td>
</tr>
<tr>
<td>41.</td>
<td>Mix and apply (\frac{1}{4}) inch poultice, cover, let dry 24 hours, and scrape or brush off filler.</td>
</tr>
<tr>
<td>42.</td>
<td>Mix and apply poultice or soaked blotter or sponge, cover, dry 48 hours, brush, and water wash.</td>
</tr>
<tr>
<td>43.</td>
<td>None. Stain will weather away.</td>
</tr>
<tr>
<td>46.</td>
<td>Protect drains from wax coating.</td>
</tr>
<tr>
<td>47.</td>
<td>Remove source of stain.</td>
</tr>
<tr>
<td>48.</td>
<td>Repeat as needed.</td>
</tr>
<tr>
<td>49.</td>
<td>Scrape stain.</td>
</tr>
<tr>
<td>50.</td>
<td>Scrub brick, not mortar.</td>
</tr>
<tr>
<td>51.</td>
<td>Scrub with agent and rinse with water.</td>
</tr>
<tr>
<td>52.</td>
<td>Scrub with water.</td>
</tr>
<tr>
<td>53.</td>
<td>Soak stain with water, apply agent, rinse with water, and dry.</td>
</tr>
<tr>
<td>58.</td>
<td>Spray apply agent slowly onto wall to keep surface moist. Collect agent at wall base and recirculate to agent storage tank for 5 to 30 minutes. Apply high-pressure water rinse.</td>
</tr>
<tr>
<td>59.</td>
<td>Spray with abrasive dry.</td>
</tr>
<tr>
<td>62.</td>
<td>Spray with agent.</td>
</tr>
<tr>
<td>66.</td>
<td>Start at top of wall.</td>
</tr>
<tr>
<td>70.</td>
<td>Wait for at least 3 days.</td>
</tr>
<tr>
<td>71.</td>
<td>Wash with agent.</td>
</tr>
<tr>
<td>72.</td>
<td>Wash with water.</td>
</tr>
</tbody>
</table>

NOTE: Safety operations for each chemical are listed in the Material Safety Data Sheet available from the chemical manufacturer. Appropriate safety operations are not listed in this table.