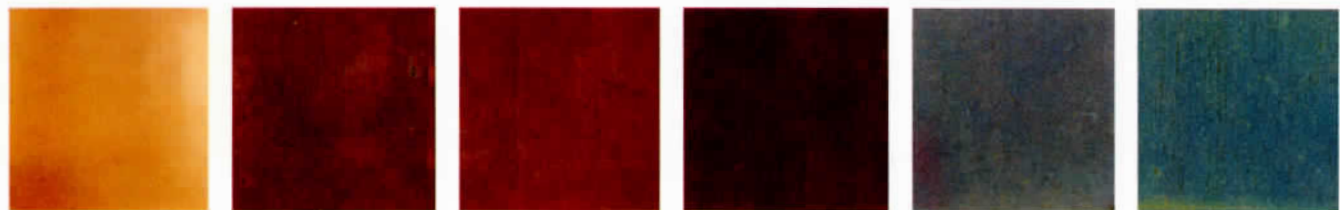
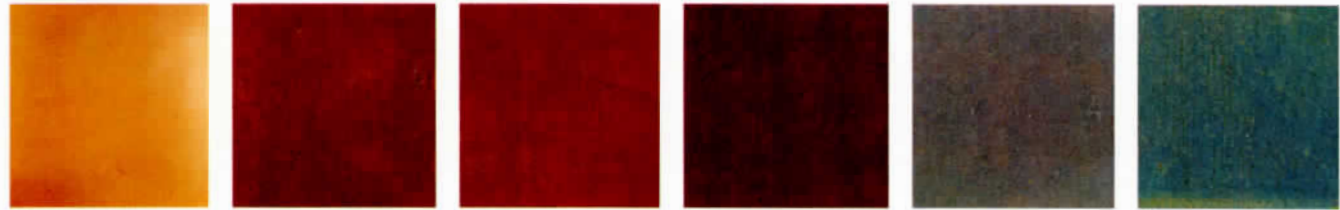
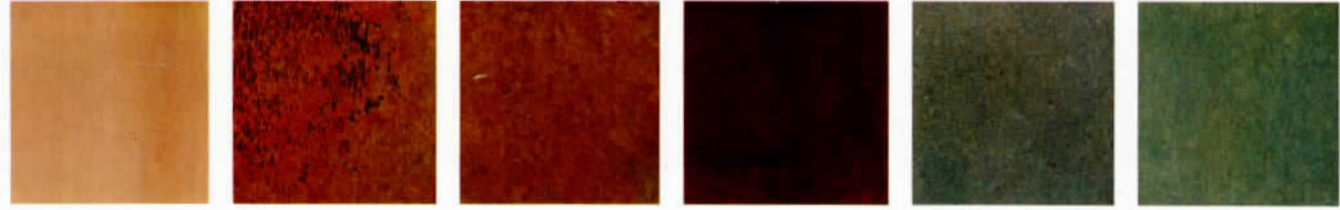
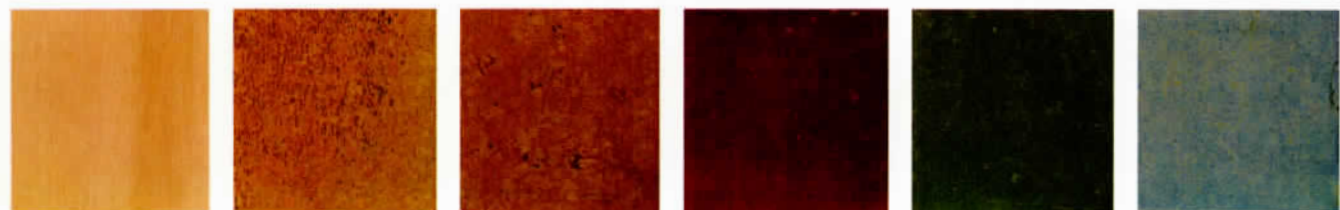
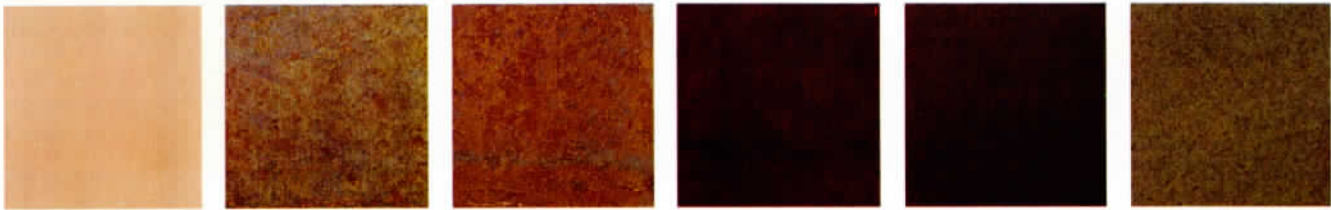

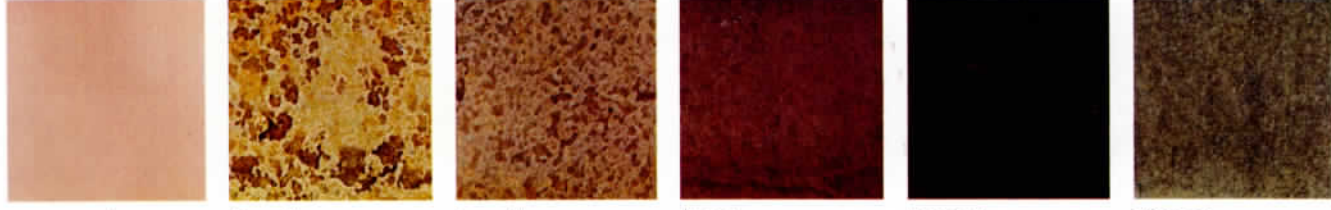




ALLOY NUMBER— COMPOSITION—COLOR	PHYSICAL PROPERTIES	ENGLISH	METRIC	FORMS AVAILABLE (commonly used forms are in boldface type)	SPECIFICATION STANDARDS	CHANGES IN APPEARANCE DURING WEATHERING CYCLES: (weathered colors described herein are based on exposure to an industrial environment (Waterbury, Conn.). In a rural or suburban environment, a longer exposure is normally required to achieve the weathered colors described on p. 12 and illustrated below).
110 copper nominal composition: 99.9% copper color: natural—salmon red weathered—from reddish-brown to gray-green patina in six years	coefficient of thermal expansion modulus of elasticity tensile strength: cold rolled temper sheet cold rolled high yield sheet	.0000094 per °F 17,000,000 psi 36,000 psi 40,000 psi	.0000170 per °C 117,200 Mpa 248 Mpa 276 Mpa	lead coated sheet bar rod strip sheet plate building construction—sheet strip pipe tube wire	ASTM B101 ASTM B133 ASTM B152 ASTM B370	 <p>unexposed 1 week 1 month 1 year 5 years 10 years</p>
122 copper nominal composition: 99.9% copper .02% phosphorous color: natural—salmon red weathered—from reddish-brown to gray-green patina in six years	coefficient of thermal expansion modulus of elasticity tensile strength: cold rolled high yield sheet	.0000094 per °F 17,000,000 psi 40,000 psi	.0000170 per °C 117,200 Mpa 276 Mpa	pipe rod plate sheet strip rolled bar threadless pipe welded tube tube	ASTM B42 ASTM B133 ASTM B152 ASTM B302 ASTM B447 ASTM B75 ASTM B88	weathers similarly to Alloy 110 above.  <p>unexposed 1 week 1 month 1 year 5 years 10 years</p>
220 commercial bronze nominal composition: 90% copper 10% zinc color: natural—red gold weathered—from brown to gray-green patina in six years	coefficient of thermal expansion modulus of elasticity tensile strength: half hard sheet	.0000102 per °F 17,000,000 psi 52,000 psi	.0000184 per °C 117,200 Mpa 360 Mpa	plate sheet strip rolled bar wire tube rod bar	ASTM B36 ASTM B134 ASTM B135	 <p>unexposed 1 week 1 month 1 year 5 years 10 years</p>
230 red brass nominal composition: 85% copper 15% zinc color: natural—reddish yellow weathered—from chocolate brown to gray-green patina in six years	coefficient of thermal expansion modulus of elasticity tensile strength: half hard sheet	.0000104 per °F 17,000,000 psi 57,000 psi	.0000187 per °C 117,200 Mpa 393 Mpa	bar plate sheet strip pipe wire tube rod	ASTM B36 ASTM B43 ASTM B134 ASTM B135	 <p>unexposed 1 week 1 month 1 year 5 years 10 years</p>
260 cartridge brass nominal composition: 70% copper, 30% zinc color: natural—yellow	coefficient of thermal expansion modulus of elasticity tensile strength: half hard sheet	.0000111 per °F 16,000,000 psi 62,000 psi	.0000199 per °C 110,300 Mpa 427 Mpa	plate sheet strip rolled bar wire tube pipe rod	ASTM B26 ASTM B134 ASTM B135	Alloy 260 is recommended primarily for interior work. When employed for exterior work, the alloy is seldom permitted to weather. The natural color of the alloy is usually retained through the use of clear organic coatings or film laminates. See Chapter 4, p. 21.

ALLOY NUMBER COMPOSITION—COLOR	PHYSICAL PROPERTIES	ENGLISH	METRIC	FORMS AVAILABLE (commonly used forms are in boldface type)	SPECIFICATION STANDARDS	CHANGES IN APPEARANCE DURING WEATHERING CYCLES: (weathered colors described herein are based on exposure to an industrial environment (Waterbury, Conn.). In a rural or suburban environment, a longer exposure is normally required to achieve the weathered colors described on p. 14 and illustrated below).
<p>280 Muntz metal</p> <p>nominal composition: 60% copper 40% zinc</p> <p>color: natural—reddish yellow weathered—from red brown to gray-brown in six years</p>	<p>coefficient of thermal expansion</p> <p>modulus of elasticity</p> <p>tensile strength: half hard sheet</p>	<p>.0000110 per °F</p> <p>15,000,000 psi</p> <p>70,000 psi</p>	<p>.0000208 per °C</p> <p>103,400 Mpa</p> <p>483 Mpa</p>	<p>tube</p> <p>bar</p> <p>plate</p> <p>sheet</p> <p>strip</p> <p>bar</p> <p>rod</p> <p>strip</p> <p>wire</p>	<p>ASTM B135</p> <p>QQ-B-613 (federal specification)</p> <p>QQ-B-626</p>	 <p>unexposed 1 week 1 month 1 year 5 years 10 years</p>
<p>385 architectural bronze</p> <p>nominal composition: 57% copper 3% lead 40% zinc</p> <p>color: natural—reddish yellow weathered—from russet-brown to dark brown in six years</p>	<p>coefficient of thermal expansion</p> <p>modulus of elasticity</p> <p>tensile strength</p>	<p>.0000116 per °F</p> <p>14,000,000 psi</p> <p>60,000 psi</p>	<p>.0000209 per °C</p> <p>96,500 Mpa</p> <p>414 Mpa</p>	<p>extrusions</p> <p>bar</p> <p>rod</p> <p>wire</p>	<p>ASTM B455</p>	 <p>unexposed 1 week 1 month 1 year 5 years 10 years</p>
<p>655 silicon bronze</p> <p>nominal composition: 97% copper 3% silicon</p> <p>color: natural—reddish old gold weathered—from russet brown to finely mottled dark grey-brown in four years</p>	<p>coefficient of thermal expansion</p> <p>modulus of elasticity</p> <p>tensile strength</p>	<p>.0000100 per °F</p> <p>15,000,000 psi</p> <p>78,000 psi</p>	<p>.0000180 per °C</p> <p>103,400 Mpa</p> <p>538 Mpa</p>	<p>plate</p> <p>sheet</p> <p>strip</p> <p>rolled bar</p> <p>bar</p> <p>rod</p> <p>shapes</p> <p>wire</p> <p>pipe</p> <p>tube</p>	<p>ASTM B97</p> <p>ASTM B98</p> <p>ASTM B99</p> <p>ASTM B315</p>	 <p>unexposed 1 week 1 month 1 year 5 years 10 years</p>
<p>745 nickel silver</p> <p>nominal composition: 65% copper 25% zinc 10% nickel</p> <p>color: natural—warm silver weathered—from gray-brown to finely mottled gray-green in six years</p>	<p>coefficient of thermal expansion</p> <p>modulus of elasticity</p> <p>tensile strength</p>	<p>.0000091 per °F</p> <p>17,500,000 psi</p> <p>73,000 psi</p>	<p>.0000164 per °C</p> <p>120,700 Mpa</p> <p>503 Mpa</p>	<p>plate</p> <p>sheet</p> <p>strip</p> <p>bar</p> <p>rod</p> <p>wire</p> <p>tube</p>	<p>ASTM B122</p> <p>ASTM B151</p> <p>ASTM B206</p>	 <p>unexposed 1 week 1 month 1 year 5 years 10 years</p>
<p>796 leaded nickel silver</p> <p>nominal composition: 45% copper 42% zinc 10% nickel 2% manganese 1% lead</p> <p>color: natural—warm silver weathered—from gray-brown to finely mottled gray-green in six years</p>	<p>coefficient of thermal expansion</p> <p>modulus of elasticity</p> <p>tensile strength: extrusions</p>	<p>.000011 per °F</p> <p>16,000,000 psi</p> <p>60,000 psi</p>	<p>.0000198 per °C</p> <p>110,300 Mpa</p> <p>414 Mpa</p>	<p>bar</p> <p>extrusions</p> <p>rod</p>	<p>none applicable</p>	<p>Weathers similarly to Alloy 745 above. To retain rich, warm silver appearance, it is recommended that Alloy 796 along with its companion Alloys 745 (sheet, strip) and 973 (castings) be maintained on a regular basis by an experienced metal maintenance organization.</p>  <p>unexposed 1 week 1 month 1 year 5 years 10 years</p>