

TEMPERATURE EQUIVALENTS FOR ORTON™ STANDARD PYROMETRIC CONES

(As Determined at the National Bureau of Standards)

CONE	LARGE CONES		small	Color	Firing Stage	Customary Firing
	Heating Rate in °F/Hr					
	108°F/Hr	270°F/Hr	540°F/Hr			
		302		"black heat"	free water "boils" out	
		437			alpha to beta cristobalite inversion	
		1022			alpha to beta quartz inversion	
		1067				
022	1085	1112	1165		dehydration	
021	1116	1137	1189		90% complete	
020	1157	1175	1231			
019	1234	1261	1333	dull		overglaze colors
018	1285	1323	1386	red		enamels and gold ceramic decals
017	1341	1377	1443			
016	1407	1458	1517			
015	1454	1479	1549			glass sagging
014	1533	1540	1596			chrome & red glaze
013	1596	1566	1615			
012	1591	1623	1650	cherry		
011	1627	1641	1680	red	most of	lustre glaze
010	1629	1641	1686		organic matter	
09	1679	1693	1751		now burnt	
08	1733	1751	1801	cherry	away	low firing lead & fritted glazes
07	1783	1803	1846	red to		
06	1816	1830	1873	orange	teracottas	porous biscuit-low fire earthenware
05	1888	1915	1944		mature	
04	1922	1940	2008	orange		
03	1987	2014	2068	changing		
02	2014	2048	2098	to		
01	2043	2079	2152	yellow/	earthenware	industrial earthen ware, bisque and bone china glost
1	2077	2109	2154	orange	matures	
2	2088	2124	2154			
3	2106	2134	2185	yellow/		
4	2134	2167	2208	orange	teracottas	
5	2151	2185	2230	yellow to	melt, increasing	
6	2194	2232	2291	lt. yellow	formation	semi-porcelain
7	2219	2264	2307		of beta type	salt glaze
8	2257	2305	2372	yellow	cristobalite	stoneware
9	2300	2336	2403	with white		bone china bisque
10	2345	2381	2426	tinge		& some porcelain
11	2361	2399	2437	intense		porcelain
12	2383	2419	2471	yellow- white		
13		2455				
14		2491				
15		2608				

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CONE	LARGE CONES		small	Color	Firing Stage	Customary Firing
	Heating Rate in °C/Hr					
	60°C/Hr	150°C/Hr	300°C/Hr			
		150		"black heat"	free water "boils" out	
		225			alpha to beta cristobalite inversion	
		550			alpha to beta quartz inversion	
		575				
022	585	600	630		dehydration	
021	602	614	643		90% complete	
020	625	635	666			
019	668	683	723	dull		overglaze colors
018	696	717	752	red		enamels and gold
017	727	747	784			ceramic decals
016	764	792	825			
015	790	804	843			glass sagging
014	834	838	870			chrome & red glaze
013	869	852	880			
012	866	884	900	cherry		
011	886	894	915	red	most of	lustre glaze
010	887	894	919		organic matter	
09	915	923	955		now burnt	
08	945	955	983	cherry	away	low firing lead &
07	973	984	1008	red to		fritted glazes
06	991	999	1023	orange	teracottas	porous biscuit-low
05	1031	1046	1062		mature	fire earthenware
04	1050	1060	1098	orange		
03	1086	1101	1131	changing		
02	1101	1120	1148	to		
01	1117	1137	1178	yellow/	earthenware	industrial earthen
1	1136	1154	1179	orange	matures	ware, bisque and
2	1142	1162	1179			bone china glost
3	1152	1168	1196	yellow/		
4	1168	1186	1209	orange	teracottas	
5	1177	1196	1221	yellow to	melt, increasing	
6	1201	1222	1255	lt yellow	formation	semi-porcelain
7	1215	1240	1264		of beta type	salt glaze
8	1236	1263	1300	yellow	cristobalite	stoneware
9	1260	1280	1317	with white		bone china bisque
10	1285	1305	1330	tinge		& some porcelain
11	1294	1315	1336	intense		porcelain
12	1306	1326	1355	yellow-		
13		1346		white		
14		1366				
15		1431				