

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
017	1341	1377	1443			ceramic decals
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 &
07	1783	1803	1846	red to		fritted glazes
06	1816	1830	1873	orange	teracottas	porous biscuit-low
05	1888	1915	1944		mature	fire earthenware
04	1922	1940	2008	orange		
03	1987	2014	2068	changing		
02	2014	2048	2098	to		
01	2043	2079	2152	yellow/	earthenware	industrial earthen
1	2077	2109	2154	orange	matures	ware, bisque and
2	2088	2124	2154			bone china glost
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-		
13		2455		white		
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					