Why use them?

Although the controllers used with modern kilns provide the temperature inside the kiln often with time or rate function, it does not tell you the 'heat-work', which is a time and temperature calculation. You will need this to know if your wares or glazes have undergone the right firing. Cones are the only way to do this. It might not be necessary to use them all the time, but if you are getting to know your kiln for the first time, you suspect a malfunction or you are simply doing something new, then cones will help you.

Chart

When using the cones, you will need to refer to the relevant chart, which can be found below.

You will notice the cones are identified with numbers, from 022-14. Note the 0 is important, for instance 06 on one range is 1013 degrees, while cone 6 is 1243 degrees.

How to use them?

There are different average rates in climb of temperature, Orton uses 15°c, 60°c and 150°c These are a guide and not a rule. As Orton themselves say, you think of them as slow, medium and fast. Orton do give an idea of the average climb rate, i.e. 150 degrees an hour. A typical firing program of 0°c - 600°c would be at a climb of 100°c per hour, then 600°c – 1240°c at 200°c per hour. From this you could judge your firing at 150°c as an average climb and therefore in the area of cone 6. You will notice the slower the climb, the lower the temperature. But you will still be attaining the same heat work thus, the same cone value.

Traditionally, cones are used in groups of 3: A cone of a lower value, say cone 5, your target temperature, cone 6 and higher value cone 7. When the correct temperature has been correctly met the low will have melted completely, the target temperature will be perfectly bent and the one higher will have bent very little.

We sell self-supporting cones which afford greater accuracy and stability. You can place them in a row and they should not be close to the elements. In large kilns you might want to put more than one set in several places. Orton Ceramics have useful videos explaining how the cones can be interpreted, with other common questions explained: https://www.ortonceramic.com/dir.cfm/Resources/Pyrometric_Cones/

If you have any further questions, please call **01934 752739** and ask for the Hot Clay technician.

	Self Supporting Cones						Large Cones				Small
	Regular – SSB			Iron Free – SSK			Regular – LRB		Iron Free – IFB		Regular
Heating Rate*	15°C/hr	60°C/hr	150°C/hr	15°C/hr	60°C/hr	150°C/hr	60°C/hr	150°C/hr	60°C/hr	150°C/hr	300°C/hr
Firing Speed	Slow	Medium	Fast	Slow	Medium	Fast	Medium	Fast	Medium	Fast	Fast**
Cone #											
022		586	590								630
021		600	617								643
020		626	638								666
019	656	678	695				676	693			723
018	686	715	734				712	732			752
017	705	738	763				736	761			784
016	742	772	796				769	794			825
015	750	791	818				788	816			843
014	757	807	838				807	836			870
013	807	837	861				837	859			880
012	843	861	882				858	880			900
011	857	875	894				873	892			915
010	891	903	915	871	886	893	898	913	884	891	919
09	907	920	930	899	919	928	917	928	917	926	955
08	922	942	956	924	946	957	942	954	945	955	983
07	962	976	987	953	971	982	973	985	970	980	1008
06	981	998	1013	969	991	998	995	1011	991	996	1023
05½	1004	1015	1025	990	1012	1021	1012	1023	1011	1020	1043
05	1021	1031	1044	1013	1037	1046	1030	1046	1032	1044	1062
04	1046	1063	1077	1043	1061	1069	1060	1070	1060	1067	1098
03	1071	1086	1104	1066	1088	1093	1086	1101	1087	1091	1131
02	1078	1102	1122	1084	1105	1115	1101	1120	1102	1113	1148
01	1093	1119	1138	1101	1123	1134	1117	1137	1122	1132	1178
1	1109	1137	1154	1119	1139	1148	1136	1154	1137	1146	1184
2	1112	1142	1164				1142	1162			1190
3	1115	1152	1170	1130	1154	1162	1152	1168	1151	1160	1196
4	1141	1162	1183				1160	1181			1209
5	1159	1186	1207				1184	1205			1221
5½	1167	1203	1225								
6	1185	1222	1243				1220	1241			1255
7	1201	1239	1257				1237	1255			1264
8	1211	1249	1271				1247	1269			1300
9	1224	1260	1280				1257	1278			1317
10	1251	1285	1305				1282	1303			1330
11	1272	1294	1315				1293	1312			1336
12	1285	1306	1326				1304	1324			1355
13	1310	1331	1348				1321†	1346†			
14	1351	1365	1384				1388†	1366†			