

How To Interpret The Results from your Bullers Rings or Discs



This data sheet is intended as a guide on how to interpret the results from Bullers Ring / Disc readings and should be read in conjunction with the data sheet 'How to Use Bullers Rings and Discs'.

the most reliable means of measuring "heat work"

Step 1

The results from the Bullers Rings / Discs should be compared against historical data where available.

If Bullers Rings / Discs are being used for the first time, the data should be recorded for calibration with future deliveries.

A convenient method of analysing the readings from firing to firing is with the use of a simple spreadsheet, an example of which can be found below:



Kiln No 3 Bullers Disc Performance

Kiln Position	Run Number					Average
	1	2	3	4	5	
1	35	35	35	36	36	35 1/2
2	35	34	36 1/2	35	35	35
3	34	34	35	36	35	35
4	37	34 1/2	31 1/2	36 1/2	37	35 1/2
5	36	34 1/2	35 1/2	32	36 1/2	35
6	35	36 1/2	35 1/2	32	35	35
7	35	32	34	38	32	34
8	35	35	34	34	36	35
9	34	35	34 1/2	35	35	34 1/2
10	35	32	34	38	32	34
11	34	35	34	34	36	34 1/2
12	33	35	33	35	35	34
Average	35	34 1/2	34 1/2	35	35	
Max	37	36 1/2	36 1/2	38	37	
Min	33	32	31 1/2	32	32	
Range	4	4 1/2	5	6	5	

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Step 2

When compared to previous data, the differences can be interpreted as follows:

High readings indicate that more Heat Work has taken place, either locally or overall.

Possible causes are:

- An increase in peak temperature
- An increase in time at peak temperature
- Reduced Kiln Load

Remedies

Generally, the remedies will be specific to the individual kiln, but typical areas to investigate are:

- Check burner operation (in the case of a gas kiln)
- Check damper operation
- Check kiln pressure
- Check for reduced kiln load
- Check kiln reference thermocouple setting

Low readings indicate that less Heat Work has taken place, either locally or overall.

Possible causes are:

- Increased setting load (higher density)
- Leaking temperature
- Peak temperature not reached
- Kiln loading too dense - Reduced air flow

Remedies

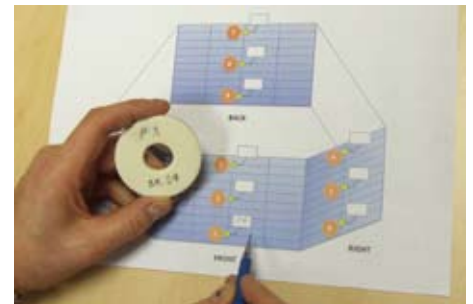
Generally, the remedies will be specific to the individual kiln, but typical areas to investigate are:

- | | |
|---|--|
| <ul style="list-style-type: none">• Check element integrity (electric kiln)• Check kiln seals• Check damper seals• Check kiln lining | In the case of localised low readings (cold spots): <ul style="list-style-type: none">• Modify the burner ratio (gas kiln)• Balance out the kiln pressure• Modify heat input pattern |
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Notes

All kilns and products are different and therefore there is no single solution to under or over firing. The general condition of the kiln itself and the product being fired should both be checked for changes. Any kiln modifications should only be carried out by suitably trained people.

Taylor Tunncliff has an experienced technical support team to help with any queries on the use of Bullers Rings / Discs.



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