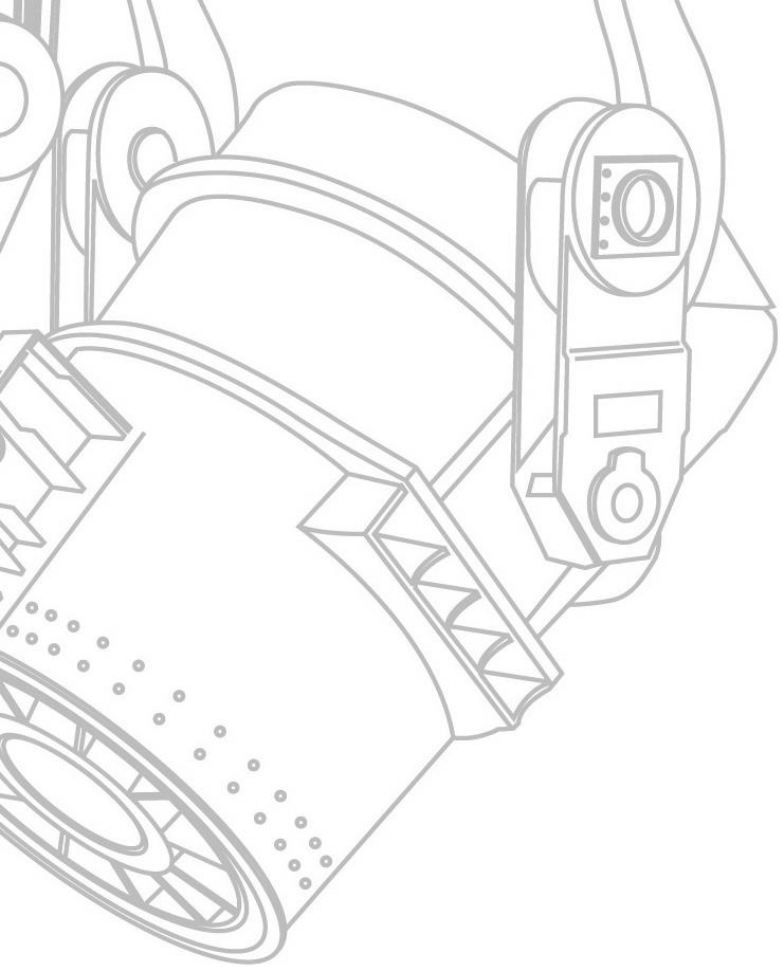
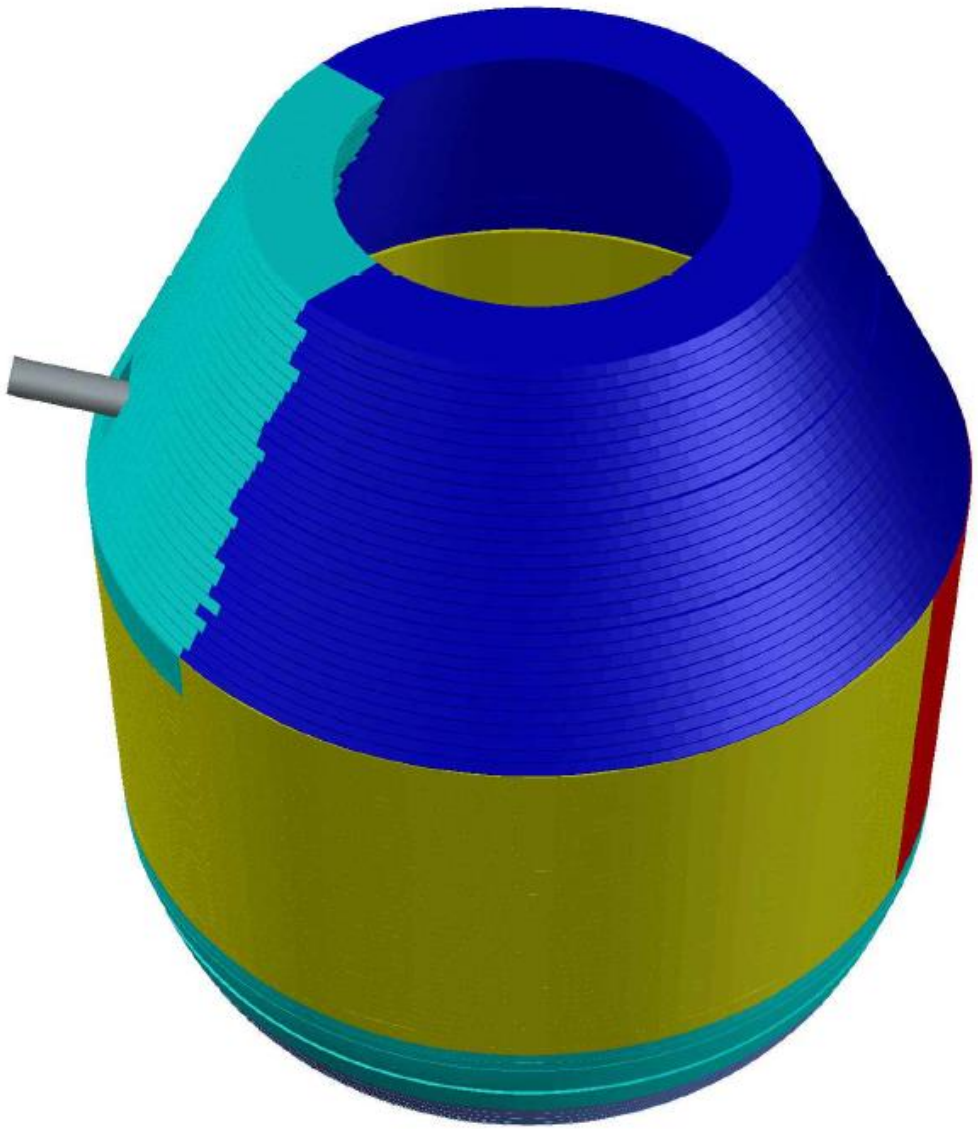


Mayerton Refractories

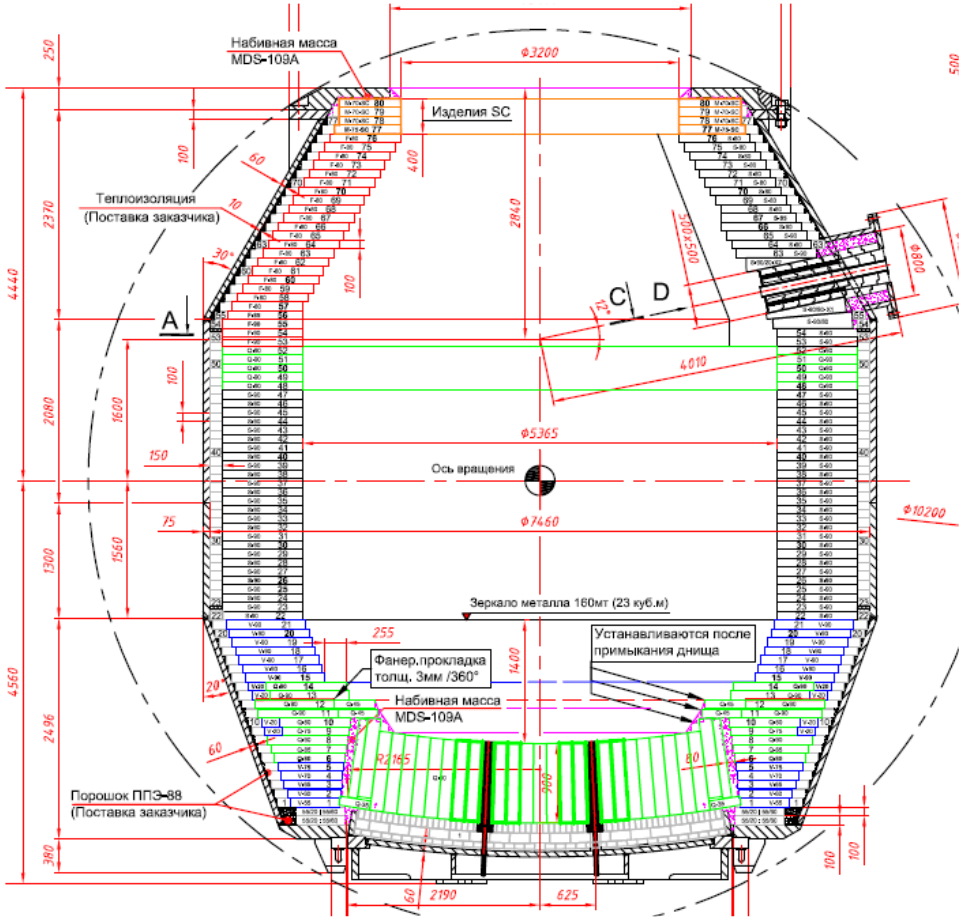
Mayerton Case Studies

June, 2019

BOF



Converter Lining

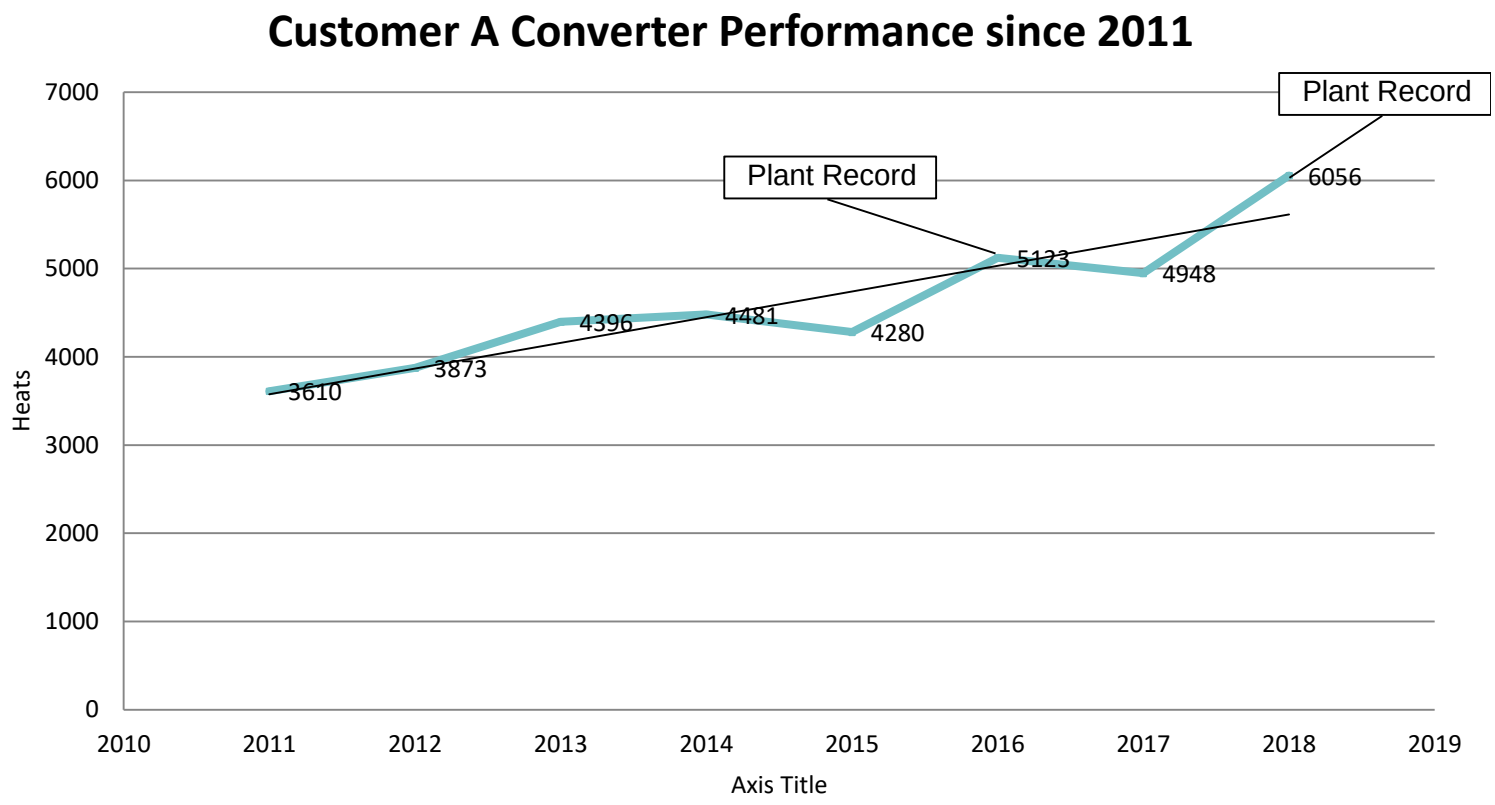


Customer A

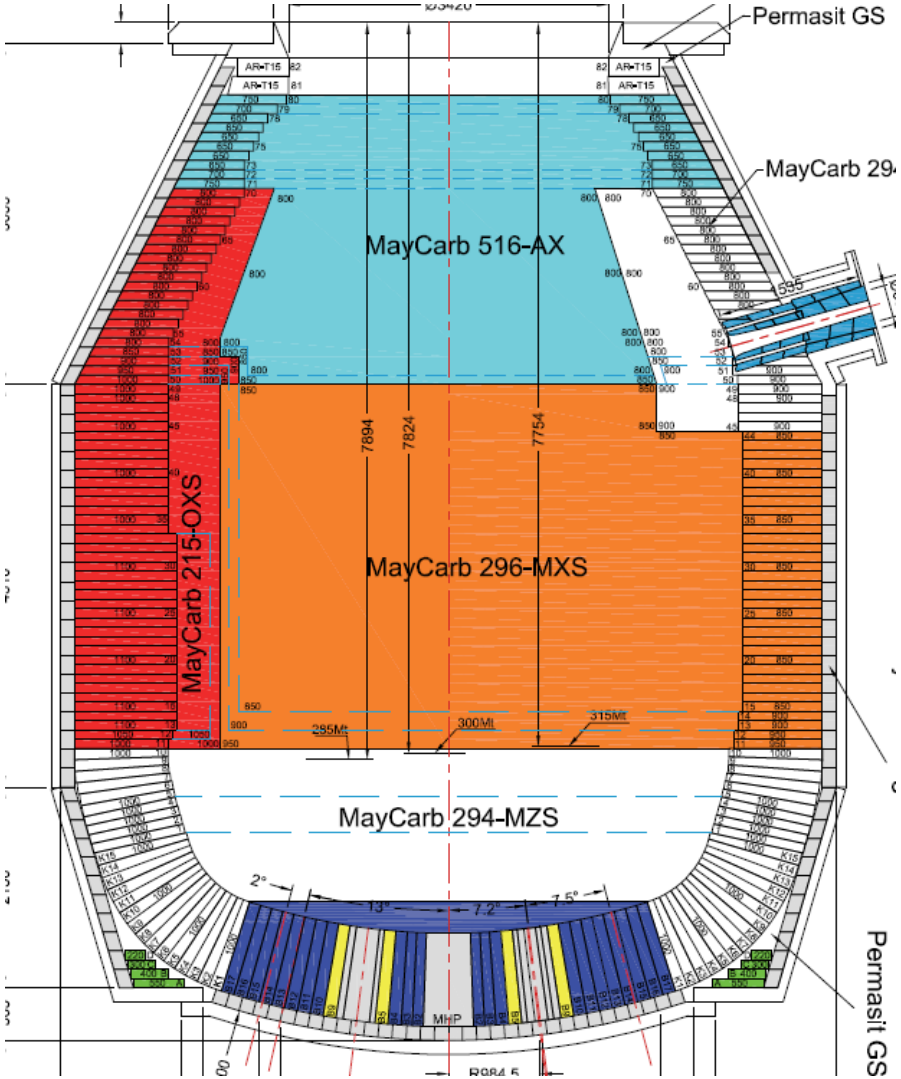
Operating Parameters

- 4.2mT Plant Capacity
- 2x 300Mt BOF Vessels
- 23% Scrap Melting
- 0.04% AVG tap C
- Slag Analysis;
  - CaO 36%
  - SiO_2 13%
  - MgO 10%
  - FeO 31%
- 48min Tap to Tap Time
- 19min Main Blow Time
- 18-24Heats per Day (max)
- 1655°C AVG Tap Temperature
- 1725°C MAX Tap Temperature
- 6% Casts >1700oC
- 4300 heats per campaign

Converter Lining



Converter Lining



Customer B

Operating Parameters

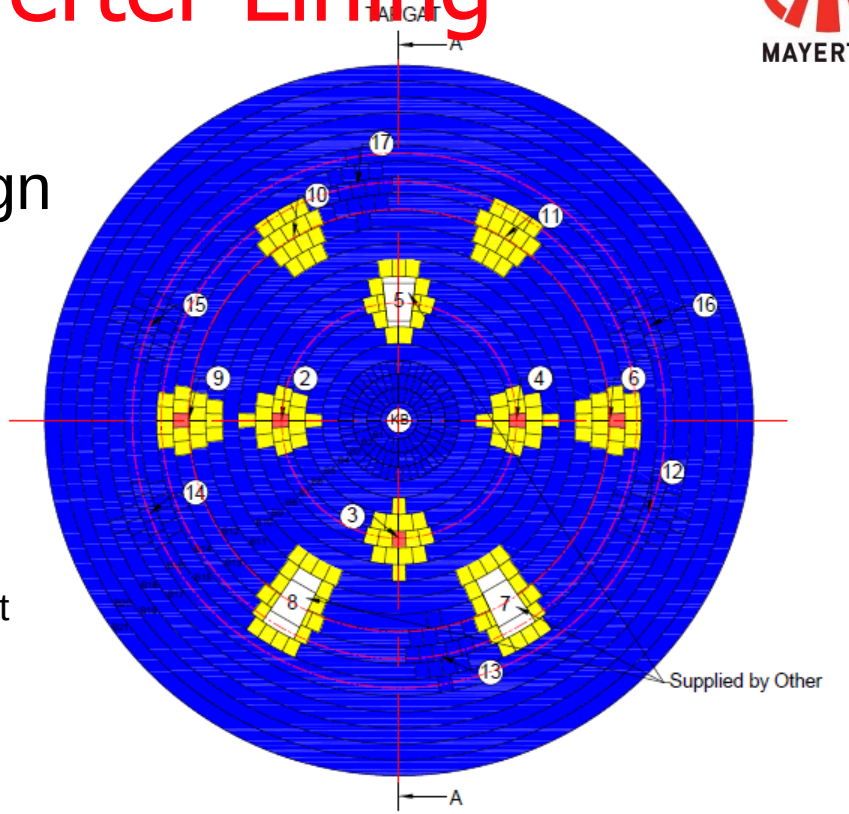
- 6.0mT Plant Capacity
- 2x 300Mt BOF Vessels
- 26% Scrap Melting
- 565ppm AVG tap O2
- 0.04% AVG tap C
- Slag Analysis;
  - CaO 52.9%
  - SiO_2 11.8%
  - MgO 4.0%
  - FeO 18%
- 30min Tap to Tap Time
- 16min Main Blow Time
- 28 - 30 Heats per Day (max)
- 1651°C AVG Tap Temperature
- 1765°C MAX Tap Temperature
- 1% Casts >1700oC
- 4000 heats per campaign

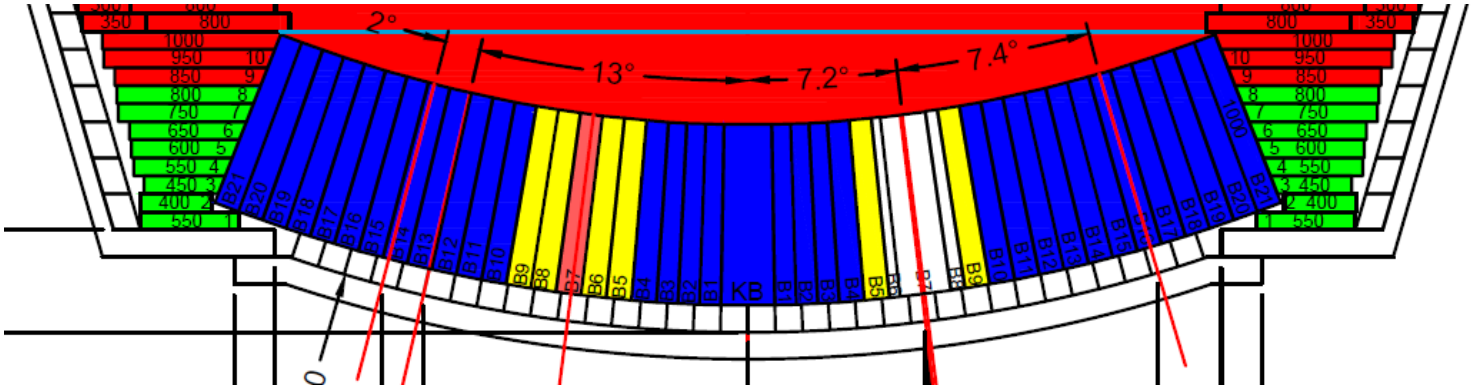
Converter Lining

Customer B

Bottom closed knuckle design – 2014 & 2015

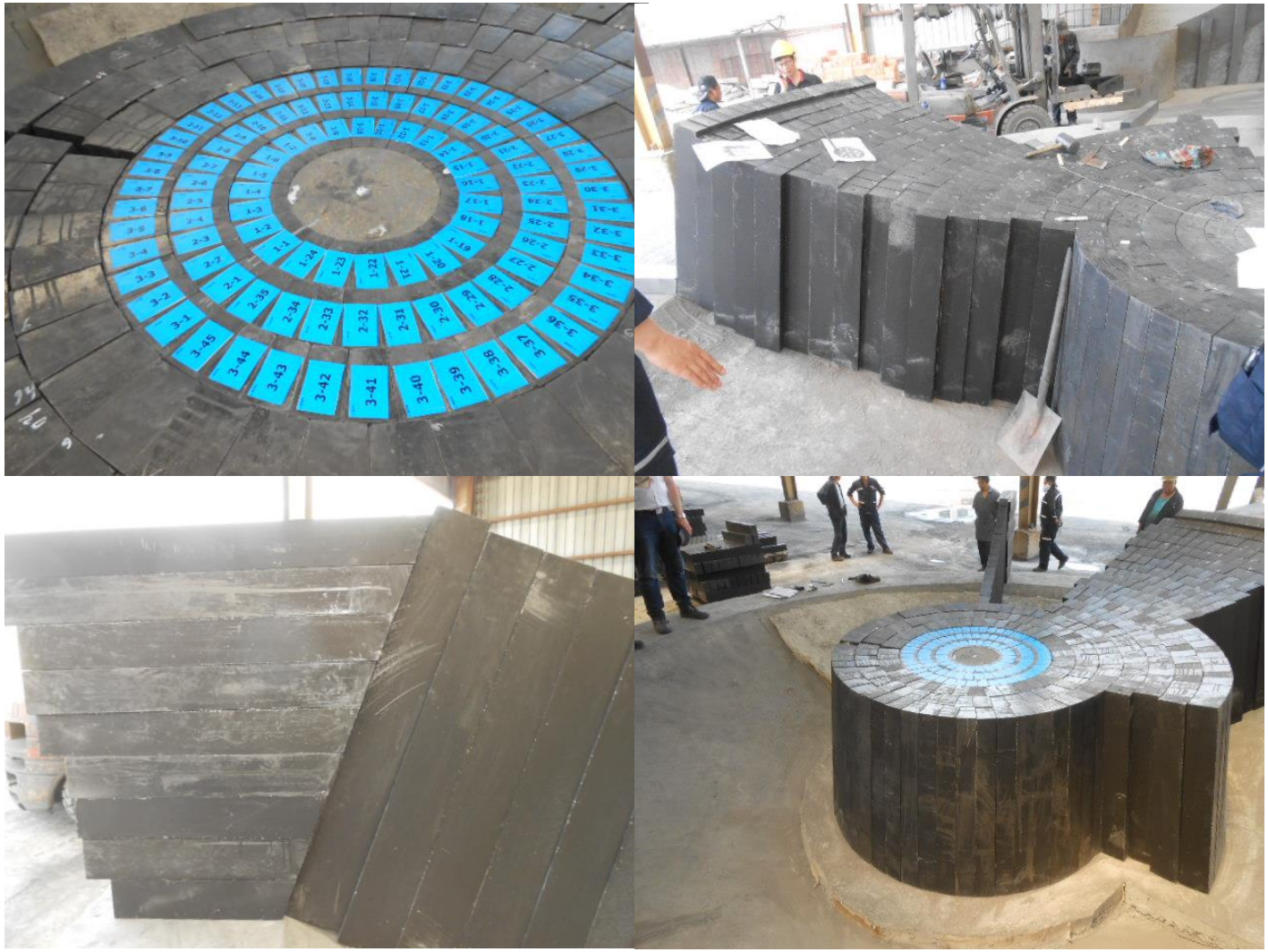
- Mayerton provided the full lining, **bottom**, **barrel** and **cone** for convertor number 3, again with a target to achieve 3000 heats.
- The campaign finished at **3266** heats due to blast furnace repairs





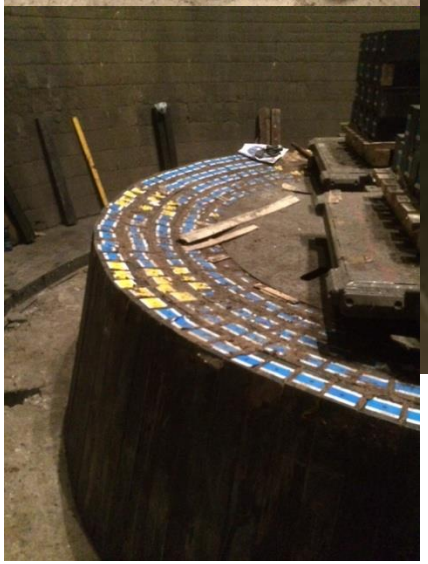
Converter Lining

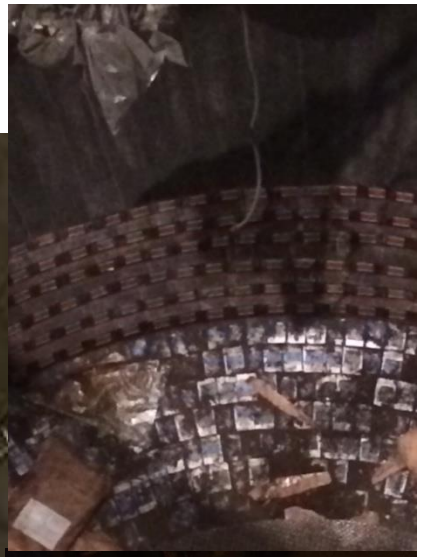
Customer B



Converter Lining

Customer B - Bottom



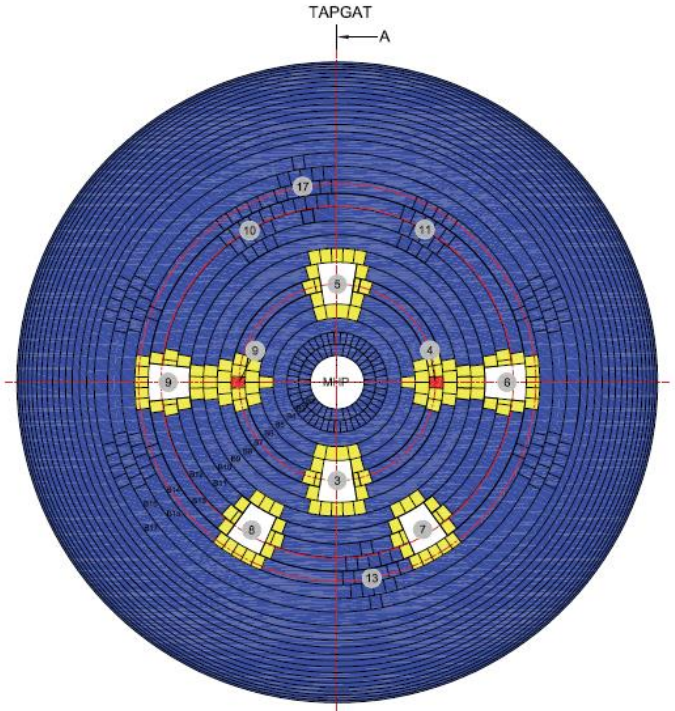


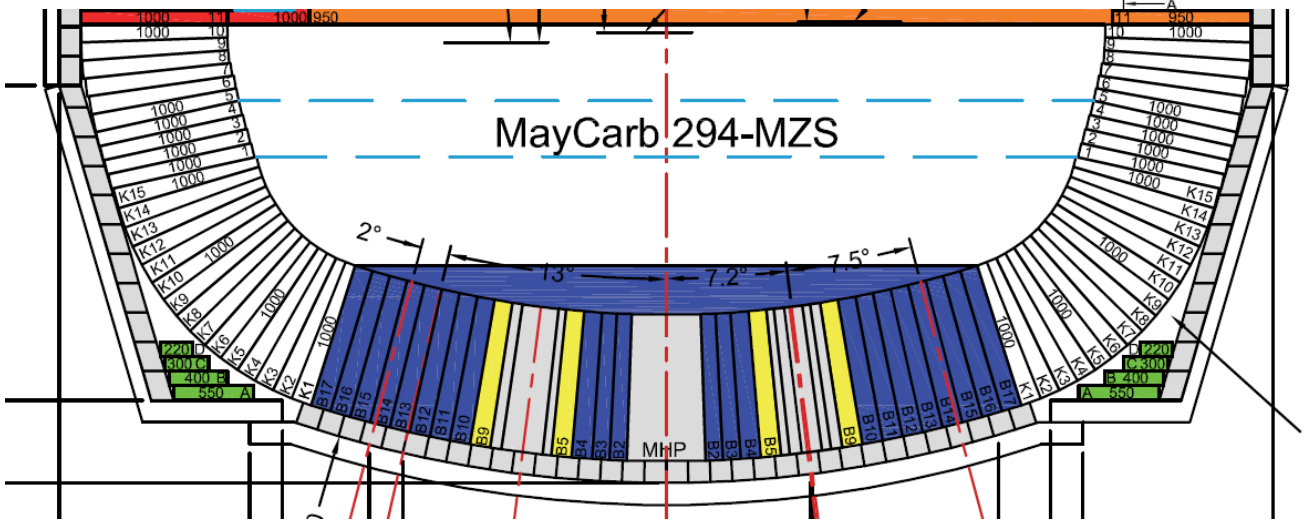
Converter Lining

Customer B

Bottom radial design - 2017

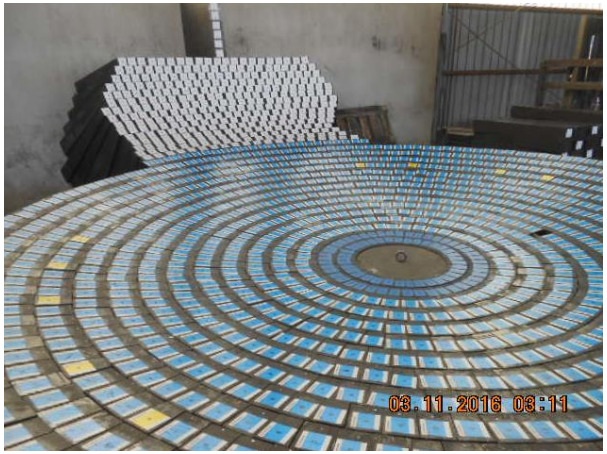
- Mayerton supplied in 2017 a full Radial Design for the bottom knuckle and Bath area.





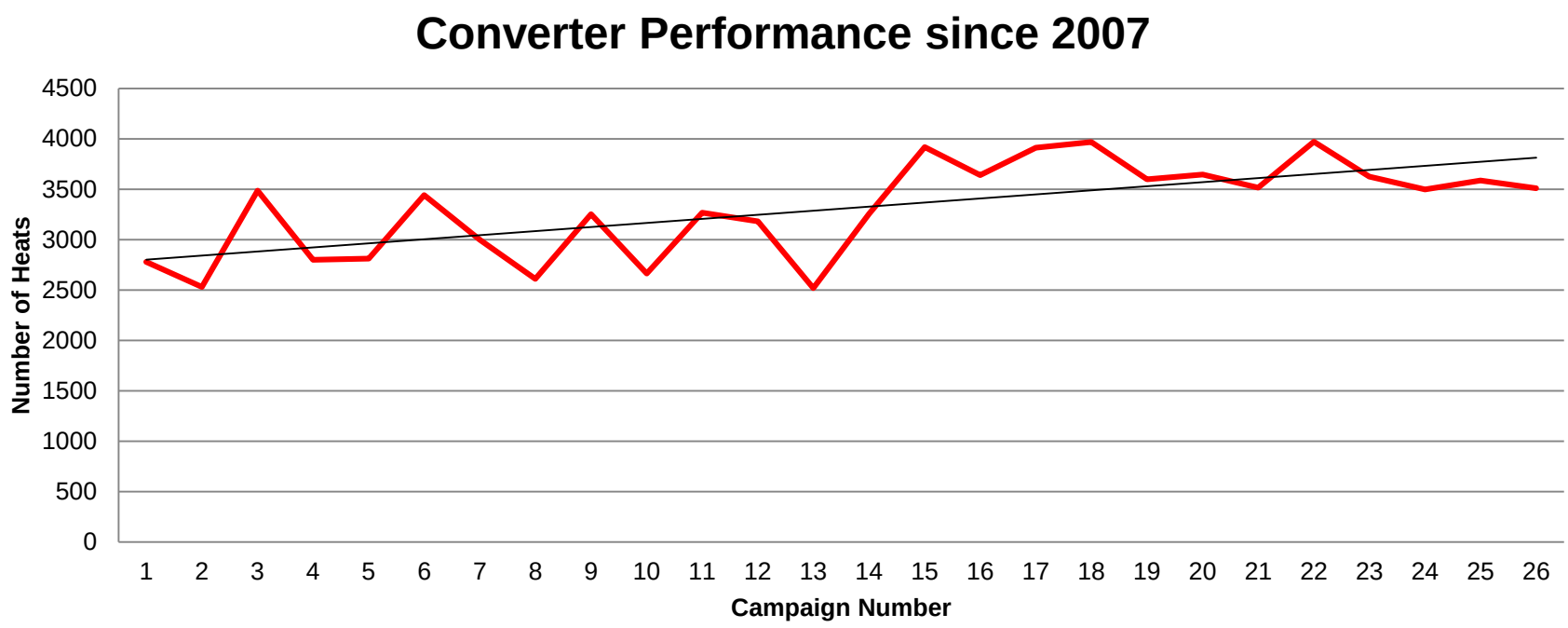
Converter Lining

Customer B- Bottom - 2017

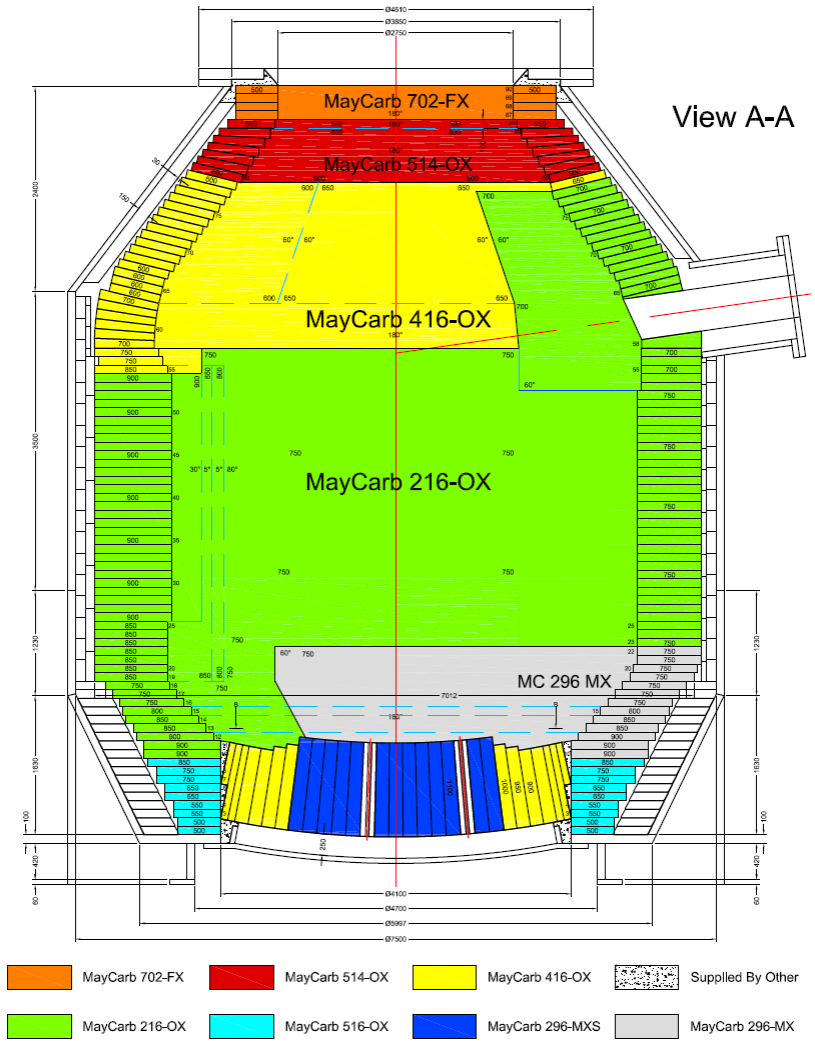


Converter Lining

Customer B



Converter Lining

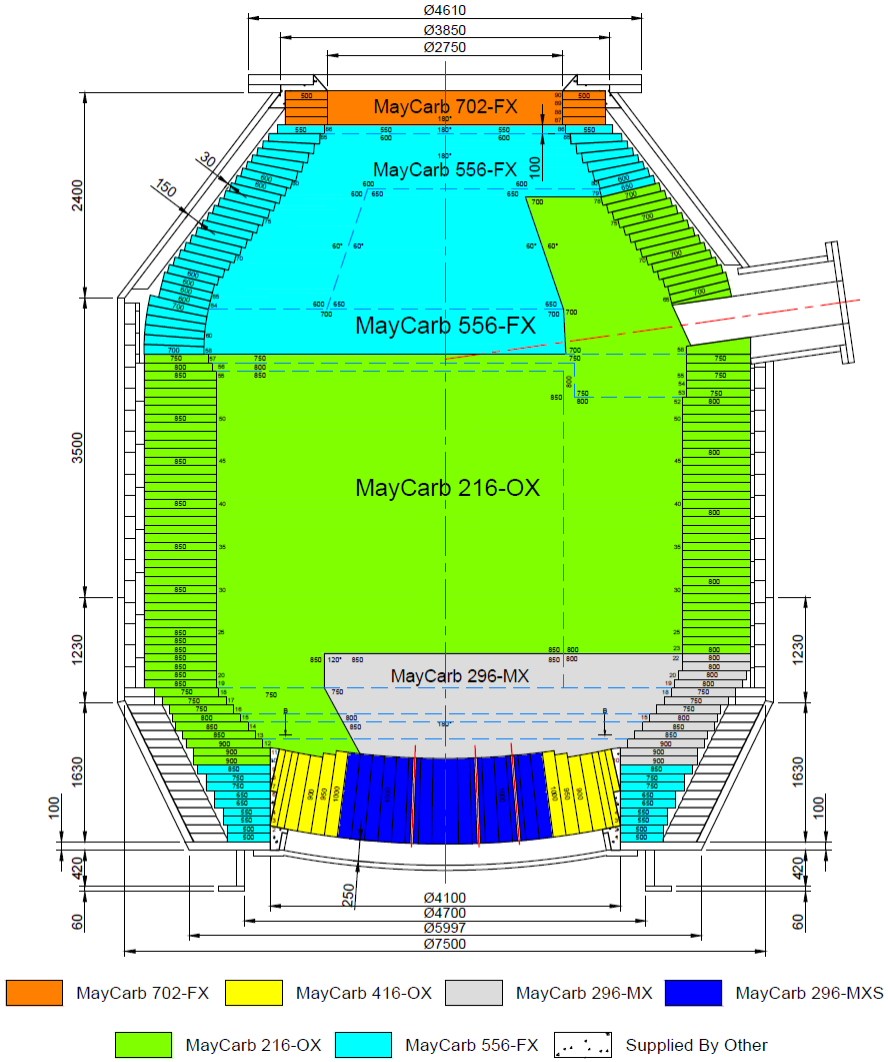


Customer C

Operating Parameters

- 4.2mT Plant Capacity
- 2x 280Mt BOF Vessels
- 15-20% Scrap Melting
- 550ppm Avg tap C
- 32-35min Tap to Tap Time
- 17-18min Main Blow Time
- 1933 heats per campaign
- The Ø Temp. was 1660°C
- Basicity: Ø3,6
- <10% re-blow rate
- <1% above 1700°C
- 2000 Target Heats

Converter Lining

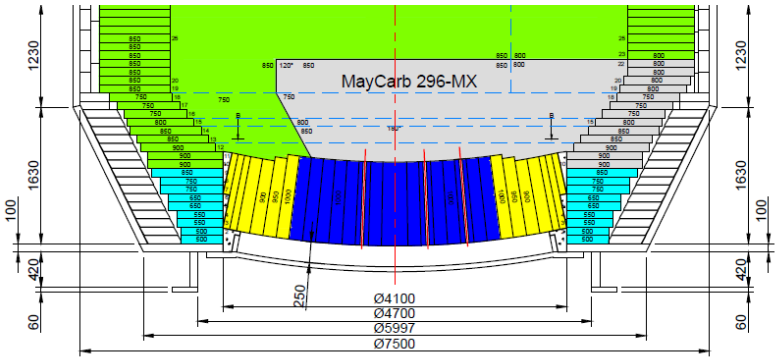


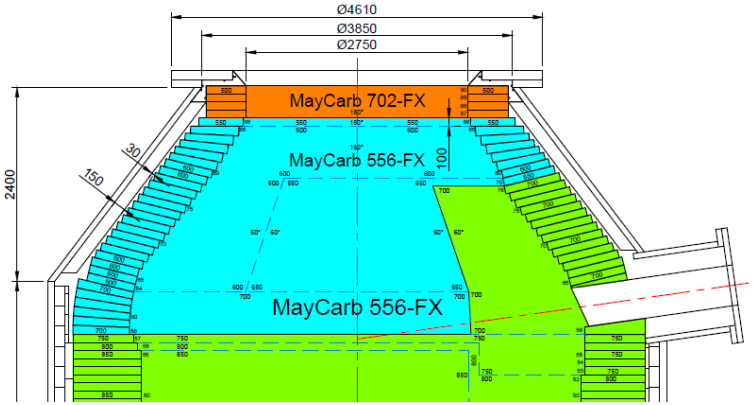
Customer C

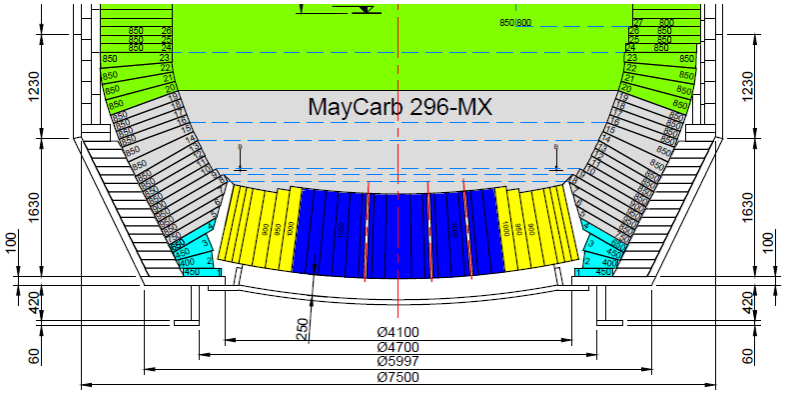
- Material changes to cone
- Bottom Change from 110mm to 100mm
- 2200 target heats

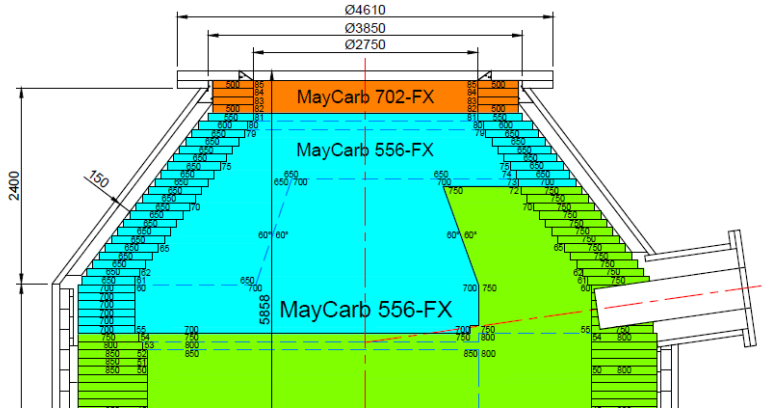
Converter Lining

Customer C

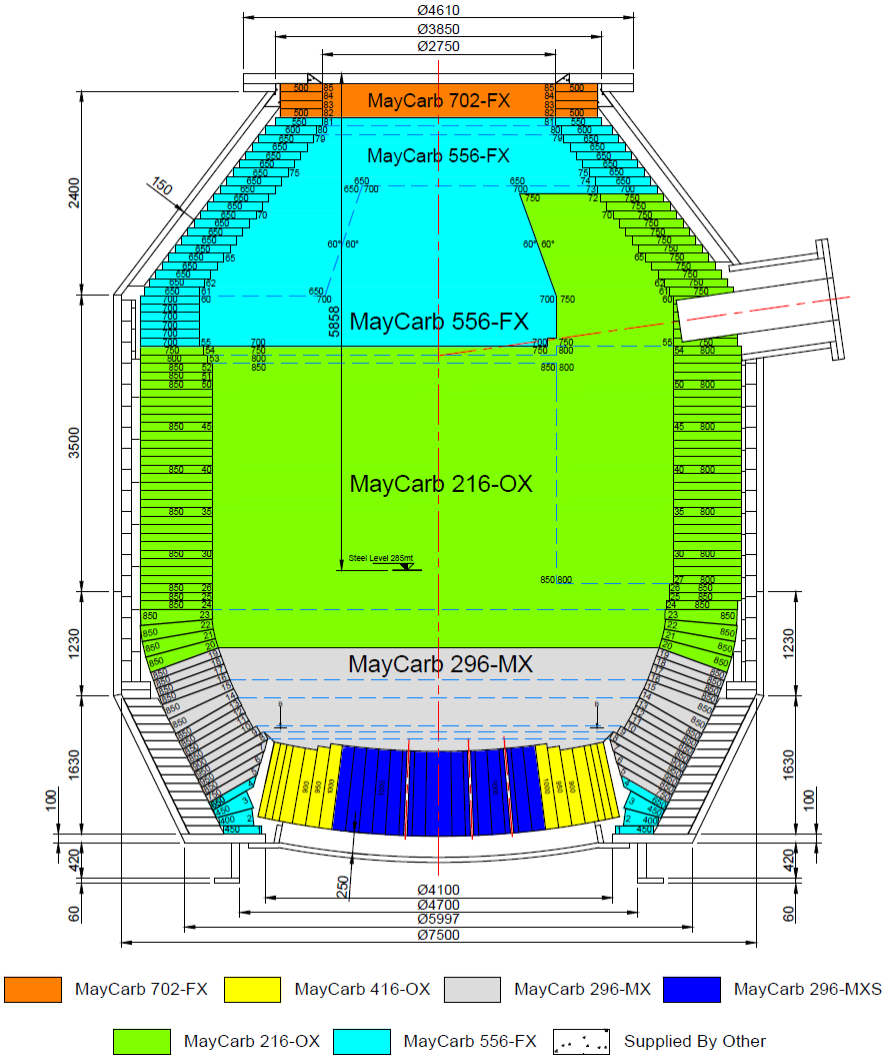








Converter Lining

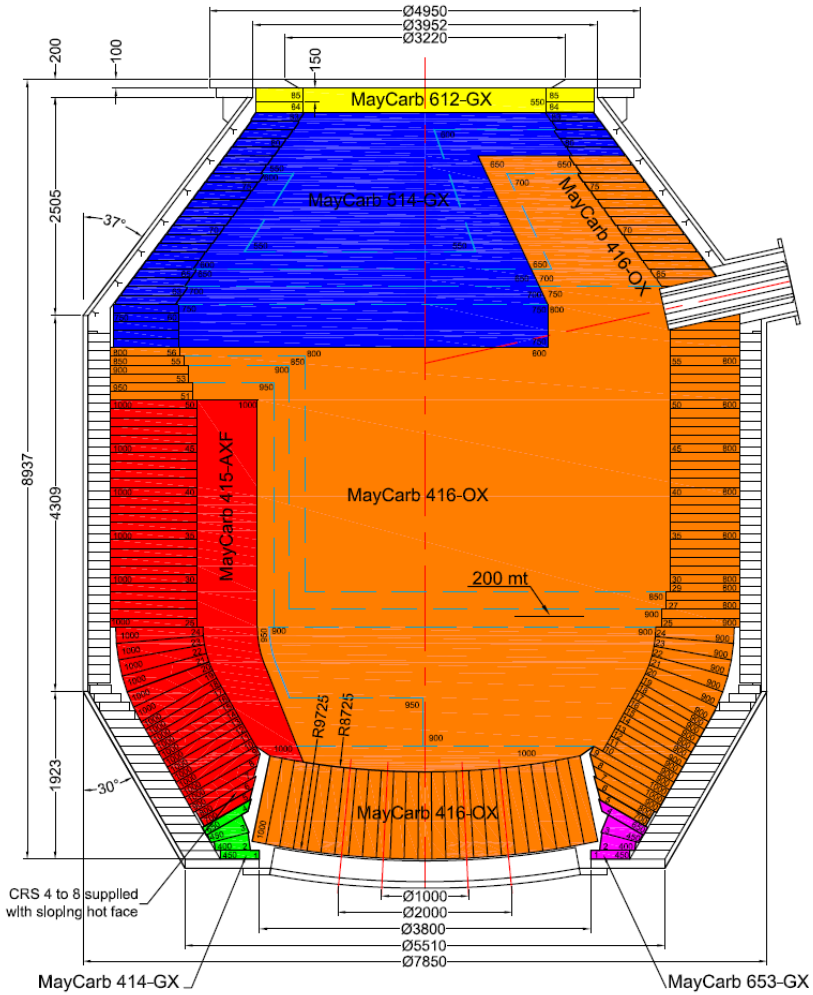


Customer C

- Design changes to upper and lower cone
- Material change to lower cone
- 2600 target heats

-Actual Performance 2520 Heats, a New Plant Record
-Taken out for Operational Reasons Could have Achieved ~2700 Heats According to the Scan Analysis

Converter Lining

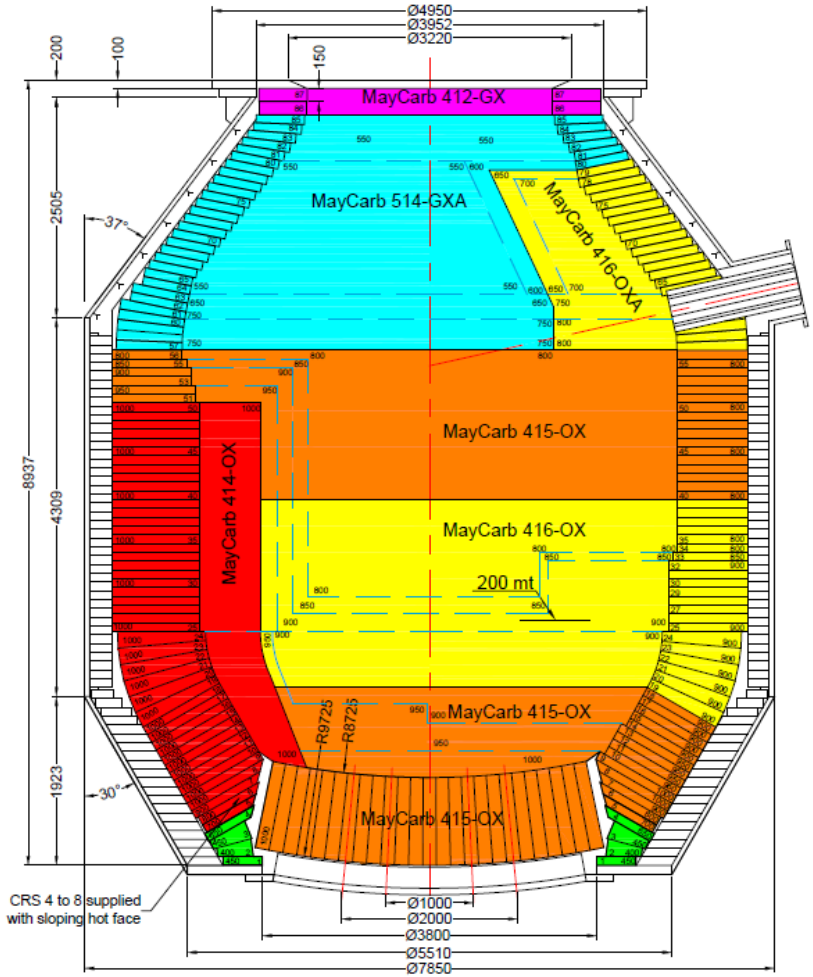


Customer D

Operating Parameters

- 2.5mT Plant Capacity
- 2x 200Mt BOF Vessels
- 20% Scrap Melting
- 550ppm Avg tap C
- 45 min Tap to Tap Time
- 33 min Main Blow Time
- 1550 heats per campaign
- The Ø Temp. was 1720ºC
- Basicity: Ø3,0
- <10% re-blow rate
- <1% above 1700ºC
- 1350 Target Heats

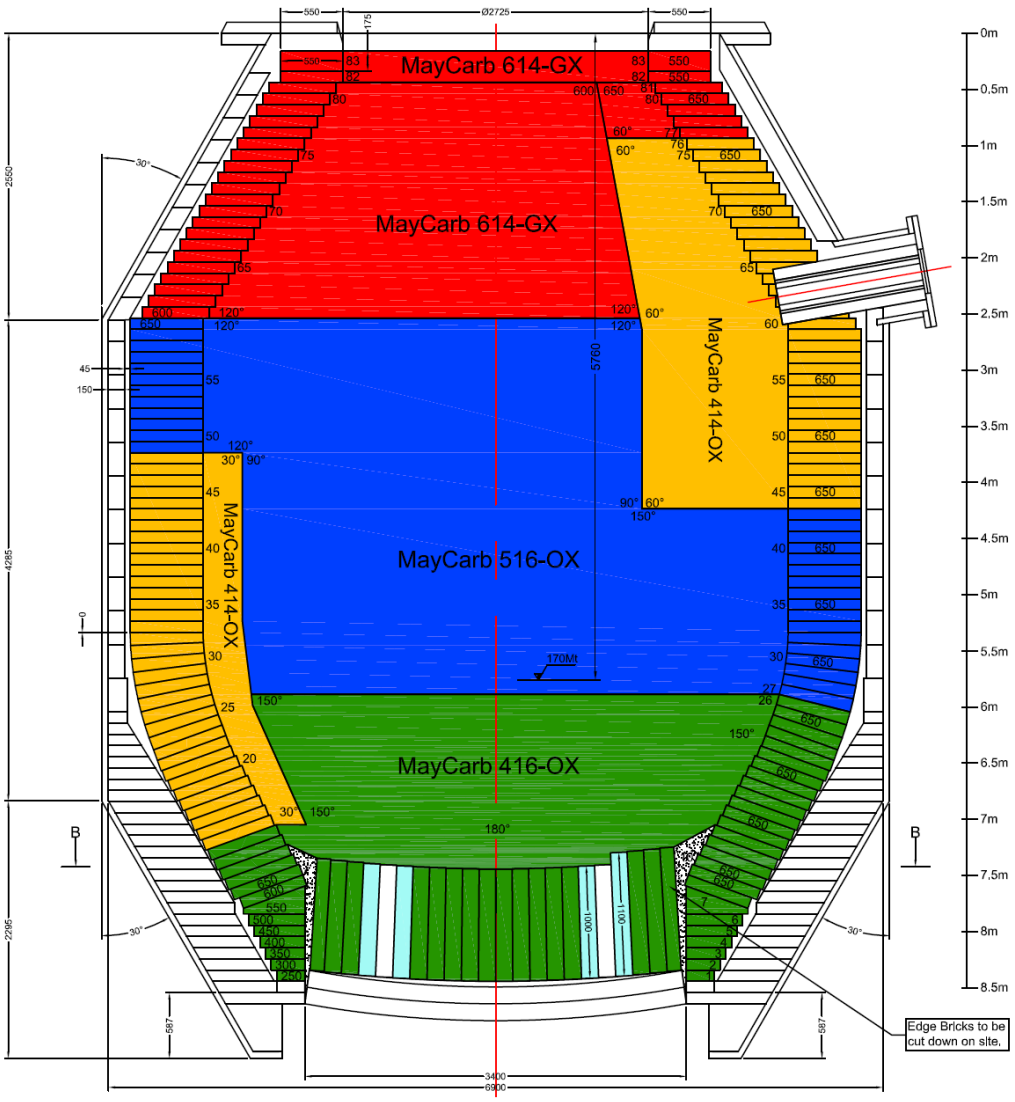
Converter Lining



Customer D

- Design changes to courses 27-33
- Material change to various areas
- 2300 target heats

Converter Lining

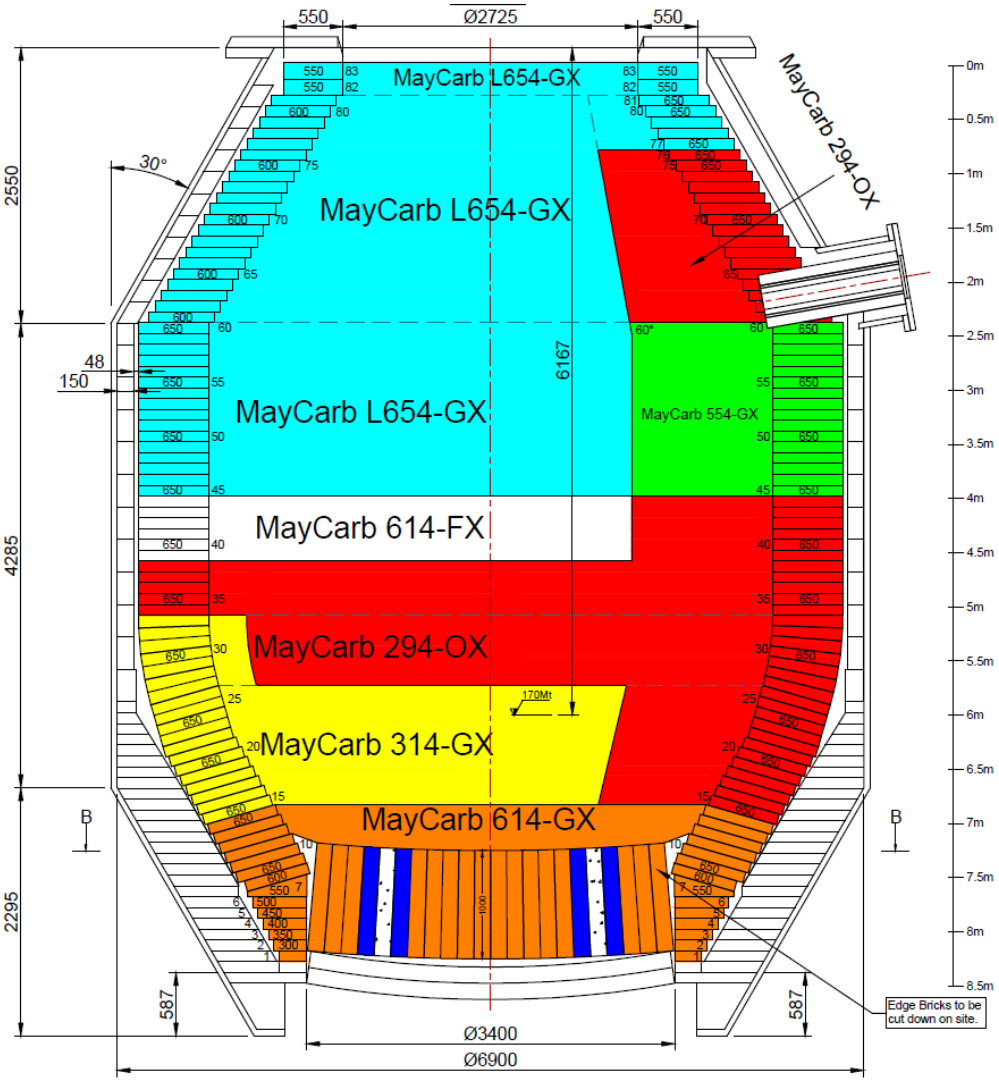


Customer E

Operating Parameters

- 2.5mT Plant Capacity
- 2x 165 Mt BOF Vessels
- 20% Scrap Melting
- ? ppm Avg tap C
- 70 min Tap to Tap Time
- ? min Main Blow Time
- 1000 heats per campaign
- The Ø Temp. was 1720ºC
- Basicity: Ø3,9
- ? re-blow rate
- ? above 1700ºC
- 800 target heats

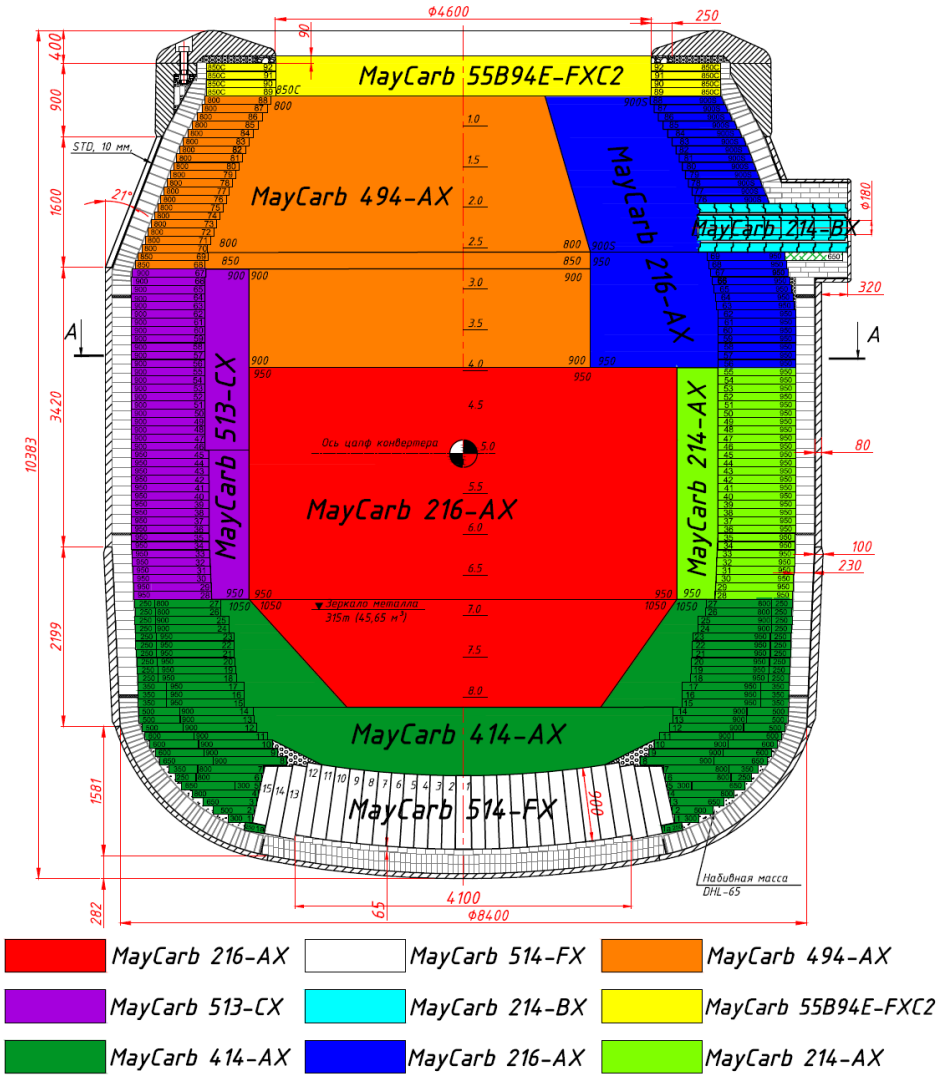
Converter Lining



Customer E

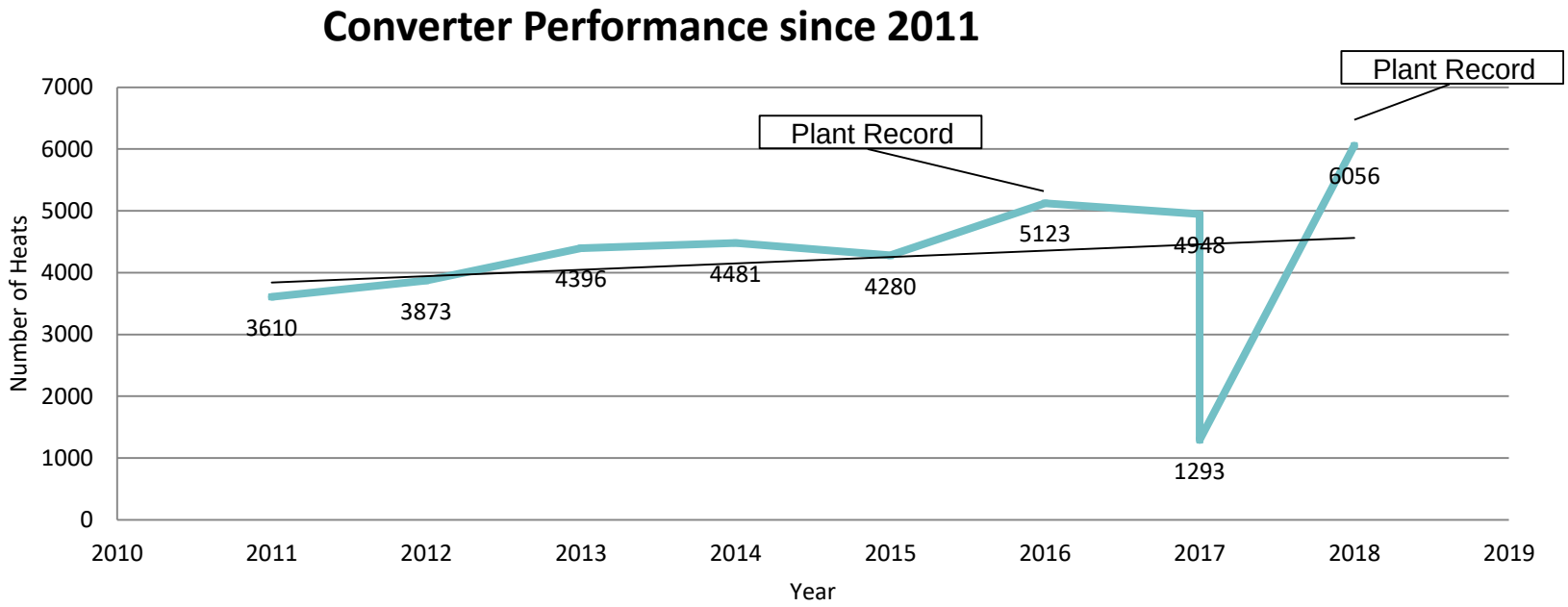
- Design changes to courses 27-33
- Material change to various areas
- 800 target heats

Converter Lining



Customer F

Operating Parameters

- 4.0m T Plant Capacity
- 2x300Mt BOF Vessels
- Ø 255 kg/t – Scrap
- 45-60min Tap to Tap Time
- Ø 19 min Main Blow Time
- 6056 heats per campaign (2017)
- Ø temp. of metal on tapping 1660 ° C
- Ø basicity, 2.65
- Ø 46% heats with re-blowing
- 6000 Target Heats(2016 year)

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