04-2017 | Nikko: 70t EAF hot test at TY Steel

Nikko successfully concluded the hot run test at TY Steel Thailand. The Customer was really satisfied about operation and time schedule.
The furnace is equipped with Brar's secondary circuit, water cooled cables and Aluminium conducting arms.

The scope of supply of Brar included the design, manufacturing, testing, impedance and unbalance calculation of the complete system from transformer to electrodes:

- Secondary circuit made of water cooled copper pipes 160x11mm including insulations and supports.
- Water cooled cables 3500mm2x10.000mm with reinforcing hoses and free-moving bumpers.
- **Aluminium** power conducting arms, box 800x440mm, 22" electrode, 1250mm PCD.

The complete scope was delivered as per schedule last year and the hot run test was performed successfully on March 27th, 2017.

Nikko engineers confirmed:

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The customer and we are satisfied your Secondary Conductors.
Now they are running EAF continuously – 15 heats for 12 hours – Vertical Set-up !!
On to tap 40 min / 390 kWh/Billet ton.
Attached please refer the results of short circuit tests.
The figures for impedance (short circuit value) at each phases are almost same value that you have estimated.

Imbalanced value will be = (2.72-2.68)/2.68=1.5% ----> Good Job! (Perfect!)

"

Dip test results met exactly our impedance and unbalance calculation confirming once again our technical knowledge and know how high-current line calculations.

Description	Impedance value		Ratio	Order
(where)	U-phase	V,W phase	(%)	
Electrode(22inches PCD 1250mm)	0,144+j0,621mΩ	0,144+j0,621mΩ	23%	②
Al power arm	0,006+j0,555mΩ	0,006+j0,566mΩ	21%	④
Water cooled cable	0,013+j0,783mΩ	0,013+j1,044mΩ	35%	①
F.Tr Bus tube sys & terminal point	0,007+j0,709mΩ	0,007+j0,496mΩ	21%	③
Furnace side total impedance	0,17+j2,668mΩ **2,673mΩ**	0,17+j2,727mΩ **2,732mΩ**	100%	
Furnace average impedance	0,17+j2,707mΩ – **2,713mΩ**			
Imbalance value	(2,732-2,673)/ 2,713x100 → **2,17%**			

Brar calculation at design stage

Dip test results

Video of Hot Run test https://youtu.be/7zNVpV-Qi7w

We would like to congratulate Nikko engineers and management for the great results and TY Steel and would thank them to the very good cooperation with our team.

> Nikko Kobe is an engineering company of providing total services for Electric Arc Furnace and Auxiliary facilities.
> BRAR is the High-current Leader for electric furnaces.

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