

And slag of the following composition:

	%
Silica (SiO_2)	27.200
Alumina	5.200
Limie	9.900
Magnesia	0.390
Iron	32.500
Manganese	8.230
Sulphur	0.570
Phosphorus	0.062
Copper	0.100

The slags at both the beginning and the end of the operation usually contain a slightly higher proportion of copper.

The slag has high contents of iron and silica, and could be used to manufacture ferro-silicon; for this purpose it should be poured directly into a special crucible, submitted to the high temperature of the electric furnace as soon as possible, in order to take advantage of the heat it possesses when it is tapped out of the crucible.

If the slag should be high in manganese, it could be manufactured into ferro-manganese and spiegels.

Remarks.

For good results it is advisable to use a voltage sufficient to cause the arc or electric current to pass from one electrode to the other, by regulating their height to just clear the surface of the bath, in order to avoid as much as possible their coming in contact with the bath. Carbon, at such high temperatures, has a tendency to reduce the iron oxide into metallic iron, which gives rise to the following inconveniences:

1st.—A more rapid wear of the electrodes.

2nd.—Loss of electric energy.

3rd.—Decrease of the copper contents of the matte.

By the use of Acheson's graphite electrodes, these inconveniences would be greatly diminished.

The economic and other advantages of this new electro-metallurgical process are at present quite evident, without having to defer judgment until further improvements are introduced; the problem may be said to have been solved by the Livet experiments.