



INSTITUTE OF REFRACTORIES ENGINEERS

Founded 1961

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Exercise 2 – Material Application

APPLICATIONS

1 THERMAL OXIDISER

Oxidising hazardous waste liquids

Service Temp – 1250°C, frequent excursions to >1400°C, for 1-2h

Waste has high level of chlorides and alkalis

Continuous operation apart from shut-downs every 4-6 weeks

Life to be 12-18 months

Minimum turnaround time

Recommended Material _____

Reasons

2 BLAST FURNACE TUYERE SURROUNDS

Burden temp >1600°C, rapid temperature variations as conditions change

Contact with liquid iron and slag

Complex shapes

Cold face in contact with water cooling elements

Can be both oxidising and reducing conditions

High mechanical and abrasive loads

Recommended Material _____

Reasons

3 STEEL DEGASSER SNORKEL

Steel temperature 1550-1650°C

Erosion by iron

Significant cooling between treatments

Joints must be v thin and uniform to prevent metal penetration or gas leaking through joints

Must be stable under vacuum, in metal

Exposed to air for extended heat up

Recommended Material _____

Reasons