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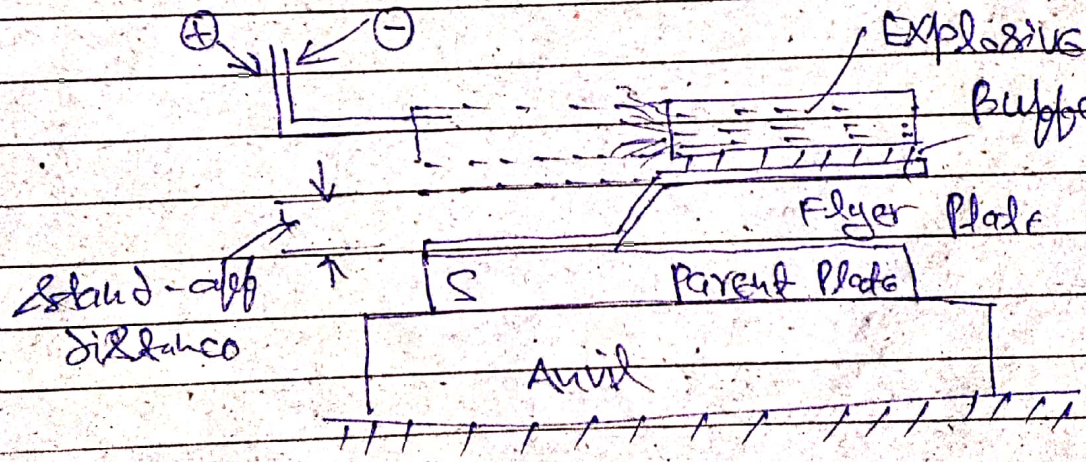
Section - 5

Q-1 → Explosive welding :-

Explosive welding is a solid state welding process wherein coalescence is produced by making one part strike over another at a very high but subsonic velocity.

Basically explosive welding involves a high velocity oblique impact between a plate propelled by an explosive charge and a stationary plate when two plates are to be explosively welded.



Working :-

The flyer plate is to a be joined with the parent plate. There is a buffer above the flyer plate which may be to of rubber, cardboard or a similar material to protect the top surface. Flyer plate should be an inclination from it. The thick plate is called as flyer plate.

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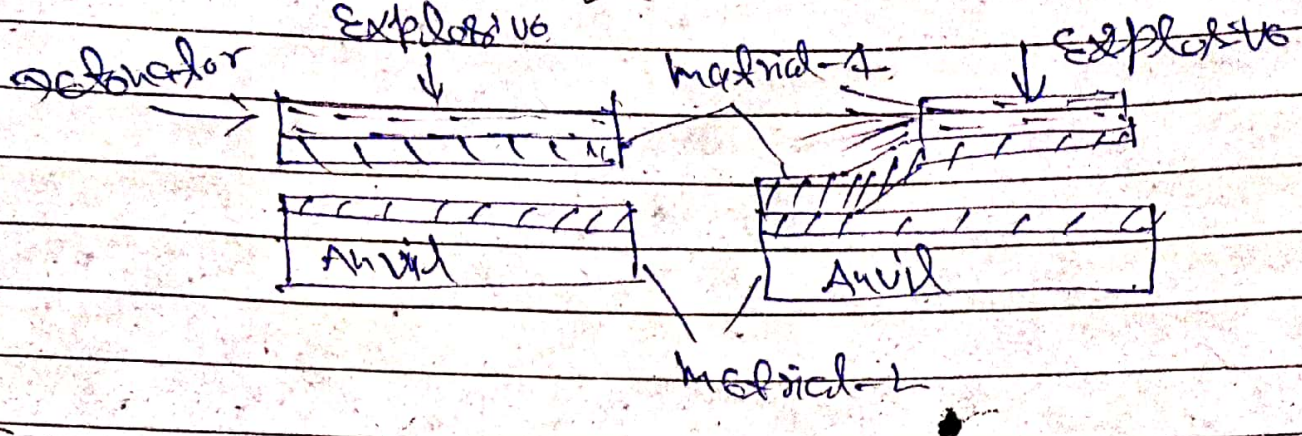
Name of Explosive used :-

(1) Parallel Method —



(2) Inclined Method —

$$V_{cp} = \frac{V_p}{\sin\left(\alpha + \tan^{-1}\left(\frac{V_p}{V_d}\right)\right)}$$

Limitation :-

In industrial areas the use of explosive will be severely restricted by the noise and ground vibration caused by explosion —

Application :-

This is used in welding joining and cladding of metals.
pipes and tubes upto 15 m length have been clad with this process.