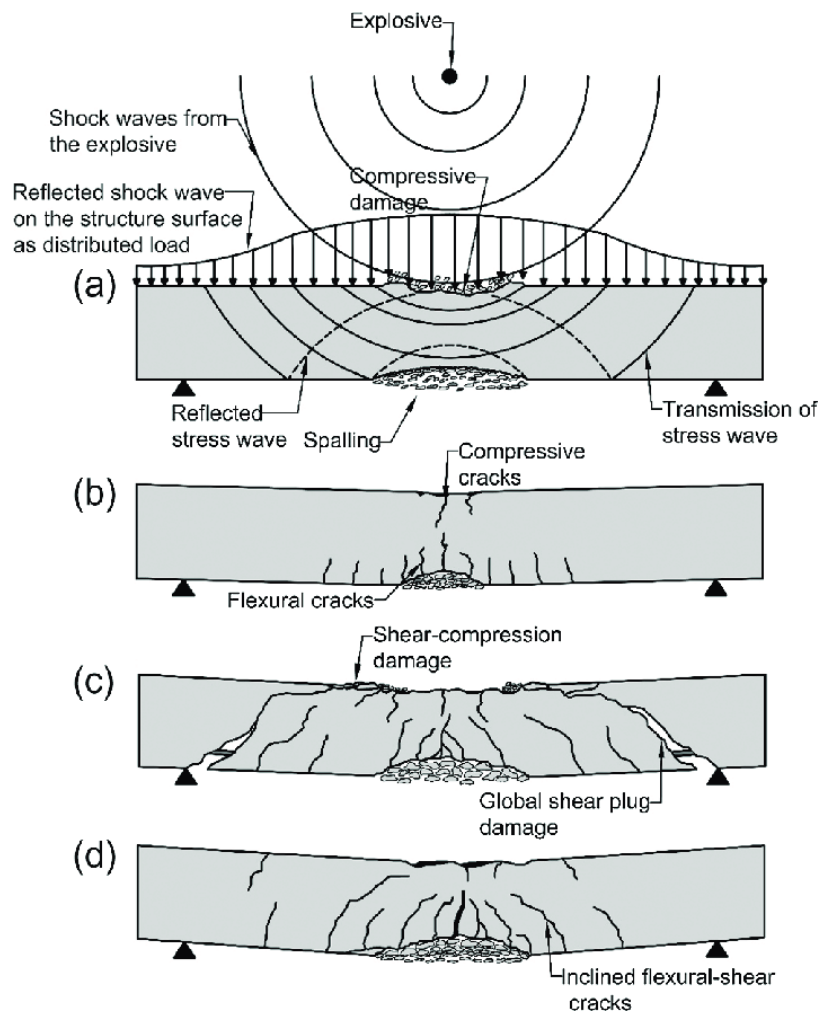


# Experimental Investigation on the Efficacy of Polyethylene Aggregate on Impact Resistance of Concrete Slab

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The impact resistances of concrete slabs have a different volume fraction replacement of waste plastic aggregate has been examined in this study as a fine aggregate as: 0% (reference), 10%, 20% and 30%. These tests include the splitting tensile, density, compressive strength. Also, the (ultrasonic pulse velocity tests) was carried out. Repeated falling mass was used in order to carry out the low-velocity impact test in which a 1300 gm steel ball was utilized.



From a height of 2400mm, the ball falls freely on concrete panels of (500×500×50 mm) with a network of waste plastic aggregate. As per the results, a prominent development was seen in the mechanical properties for mixes involving polyethylene aggregate up to 20% as compared to the

reference mix. A significant development was seen in low-velocity impact resistance of all mixes involving waste plastic fine aggregate as compared to reference mix. As per the results, the greater impact resistance at failure is offered by the mix with (20%) waste plastic aggregate by volume of sand than others. The reference mix increased by (712.5%).

**Keywords:**

[Impact resistance](#), [Plastic aggregate](#), [Ultrasonic Pulse Velocity](#)[Low- velocity impact](#)  
[Polyethylene](#)