fractures due to temperature related expansion or contraction of the material is less. The material is highly biocompatible and hence suited even for deep class II cavities. Though the material is opaque, it suits the esthetic demands of primary dentition. However due to low flexural strength but high modulus of elasticity they are brittle and prone to bulk fracture. The shear bond strength of conventional glass ionomer cements is relatively low. However bond strength is more a measure of the tensile strength of the cement itself, since fractures are usually cohesive within the cement leaving the enriched residue attached to the tooth. Fracture resistance and fracture toughness are too low to recommend the material for stress bearing regions of teeth. They are sensitive to moisture imbibition during early setting reaction and to dessication as the material begins to harden. Clinical trials over span of 3 years show poor success rates of conventional glass ionomers in primary molars and suggest that conventional glass ionomer is not an appropriate alternative to amalgam in class II cavities.

Resin reinforced glass ionomers (RMGIC). Addition of resin component within the glass ionomer formula decreases the initial hardening time and handling difficulties; substantially increases the wear resistance and physical strength of cement. The material has higher flexural strength; lower modulus of elasticity than conventional, more fracture resistant but wear resistance is not improved. To achieve the best physical properties, the mixture required the highest powder/liquid ratio possible but with assurance that all the glass powder was wetted with acid solution during spatulation. Shear bond strength of resin modified glass ionomer cements is greater. Bond strength is low to unconditioned dentin compared to conventional materials. Hence preconditioning of dentin is a must for optimal results.

Viscous or condensable glass ionomers They are faster setting, high-viscosity conventional glass ionomer cements. These materials were originally developed in the early 1990s for use in antraumatic restorative treatment. These materials set faster. They are of higher viscosity because...