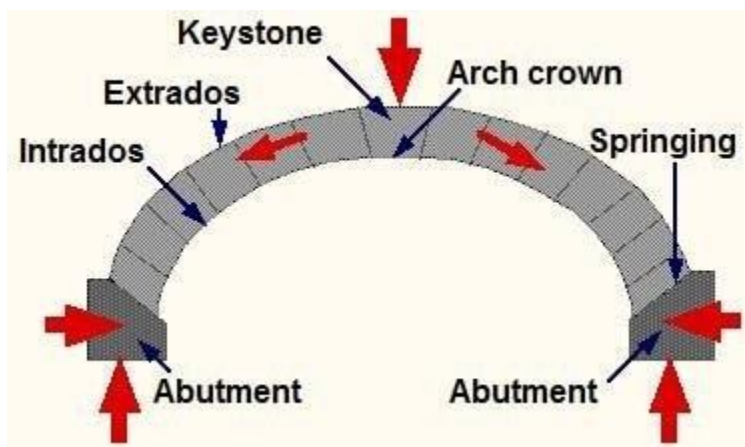
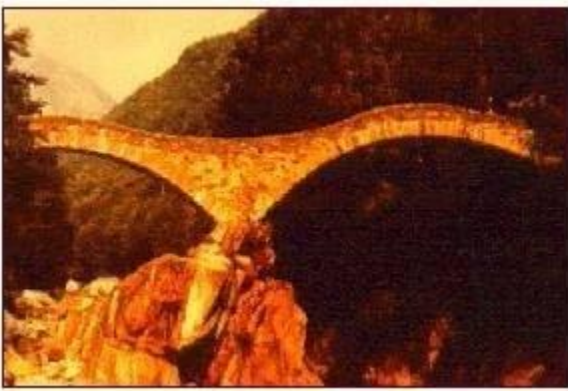


Arch:

The arch form is one of the earliest solutions to dealing with a material which has no tensile strength. The construction of an arch is fundamentally different to that of any prestressed concrete member.

The shape of the arch is designed specially such that when loaded, tensile stresses do not occur in the structure. All compressive forces evolve directly from the load.



When a load is applied to the arch, the reactions at the abutments increase. This is equivalent to an increase in magnitude of the passive prestressing force. Therefore, the magnitude of the prestressing force within an arch is a function of the applied loading. This accounts for the great strength of arch structures.