Objectives:
The purpose of this study was to evaluate push-out bond strengths of two different materials for build-up restoration and investigate the influence of different root dentin levels on bond strengths.

Materials and Methods:

Materials
- Brush&Bond™ (Parkell, U.S.A)
- Hybrid Bond™ (Sale in Europe)
- Absolute Dentin™ (Parkell, U.S.A)

Methods
- Push-out testing
  Extracted single root human maxillary canines were used. The tooth were sectioned at the cement-enamel junction using diamond saw under water cooling. After enlargement of up to 2mm diameter of root canal using Peeso reamers, two different adhesive system, group1:Brush&Bond™/Absolute-Dentin™ (Parkell USA) and group2:Bond-1®/Build-It® FR™ (Pentron;USA), were applied to each root canal in accordance with manufactures' instructions. After storage in water at 37°C for 24hours, all specimens were sectioned perpendicular to long axis and ground to 0.7mm-thick slices located at 3-level (coronal, middle, apical segment). The push-out bond strength of each section (coronal, middle) was measured at a cross-head speed of 1.0mm/min and calculated as the force at failure divided by the bonded cross-sectional surface area (Fig. 1). These data were statistically analyzed by ANOVA and Bonferroni’s test (n=20).

Microscope Observation
- The failure state after a push-out test observed with the microscope.
- SEM Observation
- Resin-dentin interfaces were observed SEM.
  - Thickness of specimen : 0.7mm
  - Final polishing : 0.05μm alumina paste
  - Treatment of specimen surface : 6N HCl (5s) 1%NaOCl (15min)
  - Tungsten sputtering : 3Ds

Results and Discussion:
Table showed the values of push-out strengths of two groups at different root dentin levels. From these results, difference in root location the difference of not affect bond strength of two materials to radicular dentin, and the bond strengths of group1 were significantly higher than those of group2 at different root dentin levels, respectively.

Conclusions:
With the limitation of these results, it was concluded that adhesive system of group1: Brush&Bond™/Absolute-Dentin™ could be useful for build-up restoration.