

Quality Certification (QC4) for the RE4 upgrade of the CMS endcap system.

Abstract content

The CMS muon system consists on Drift Tubes (DTs) in the barrel region, Cathode Strip Chambers (CSCs) in the end-cap region and Resistive Plate Chambers (RPCs) in both regions. The RPCs with their excellent time resolution were chosen as dedicated muon trigger detector for the CMS experiment. After the Long Shutdown 1 (LS1) the LHC luminosity should reach $1034 \text{ cm}^{-2} \text{ s}^{-1}$, and because of that to improve the level 1 trigger efficiency of the CMS detector becomes extremely important. In order to achieve that a 4th RPCs layer (RE4) will be installed in both end-caps of the CMS detector and all the components must be completely validated. Based on the valuable experience from the Barrel and Endcap integration, several steps have been established for the Quality Certification (QC) of the RPC production: QC1 (for components), QC2 (for gaps), QC3 (for chambers), QC4 (for chambers and super modules) and QC5 (Commissioning at P5). This work describe the steps of the Quality Certification step 4 performed for the new Resistive Plate Chambers to be integrated in the forth wheel of the CMS Muon System.

Summary

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