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Test of materials for the production of thin-gap RPCs

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Resistive plate chambers (RPCs) with electrodes of high-pressure phenolic laminate (HPL) are a well established technology for the instrumentation of muon systems at high-energy particle colliders. The gap between the HPL plates is electrodes is defined by spacers and lateral profiles made of polycarbonate. The outer surfaces are covered with sheets of polyethylene terephthalate PET.

It is known that PET foils are difficult to glue as most of the glues used for plastics can be easily ripped off the PET surface. We therefore compared different types of glues, ranging from EVA hotmelts to special glues for PET foils, regarding the quality of the glue bond and their outgasing properties.

At the moment there is only one certified producers for HPL plates that is able to provide plates with the required resistivity. We started a search for alternative suppliers of the HPL plates providing first samples with resistivity close to the required range.

In our contribution we will present our studies of different glues and the search for a new supplier of HPL plates.

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