

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY  
BELGAUM – 590 010, KARNATAKA**



**A PROJECT REPORT ON**

**“SOME STUDIES ON PERFORMANCE PROPERTIES  
OF FLAME RETARDANT FINISHED SILK FABRICS”**

**(SPONSORED BY K.S.C.S.T)**

**Submitted in the partial fulfillment of the requirement for the award of degree of**

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**PROJECT ASSOCIATES**

<b>AMRIT HANDOO</b>	<b>4BD04TX002</b>
<b>RAHUL .N.SINGH</b>	<b>4BD04TX024</b>
<b>SHIVANI BAHADUR</b>	<b>4BD05TX031</b>
<b>VINAY NADIGER.G.</b>	<b>4BD03TX033</b>

**Under the guidance of**

**Mr. Y.N DINESH  
M.Tech (Fibre sc. & Tech) MISTE  
ASSISTANT PROFESSOR  
DEPT. OF TEXTILE TECHNOLOGY**



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**DEPARTMENT OF TEXTILE TECHNOLOGY  
BAPUJI INSTITUTE OF ENGINEERING AND TECHNOLOGY  
DAVANGERE – 577 004, KARNATAKA**

## ABSTRACT

Two varieties of 100% of silk fabrics viz low GSM(grams/square meter) and medium GSM were finished with commercially available flame retardant finish Flamex CLG using pad dry cure technique (at two different concentrations) in an effort to study the effect of flame retardant finish on performance properties of silk fabrics. A dyed silk fabric was also treated with the above finish to see the effect of finish on wash and rubbing fastness of dyed silk fabric. Major performance properties like tensile strength, tearing strength, abrasion resistance, flexural rigidity, drape coefficient (DC), specific handle force (SHF) and fabric crease recovery angle (CRA) were found for both untreated and treated fabrics. Flame related properties like char length (time taken for burning of known length of fabric) and limiting oxygen index (LOI) were also determined. The dyed and dyed finished fabrics were tested for washing and rubbing fastness. It was found that the used flame retardant finish was effective in imparting flame retardency and rate of improvement was concentration dependent. Both burning time and LOI got improved as a result of treating fabric with flame retardant finish. There was some reduction in performance properties of treated fabrics. There was slight reduction in tensile strength, tearing strength and abrasion resistance of treated fabrics. Fabrics became harsher and stiff on treatment with flame retardant finish. So it was suggested to use low concentration of finish for flame retardant finishing. It was found that flame retardant finish has no effect on wash and rubbing fastness of dyed silk fabric. To study the durability of the finish fabrics were tested for flame related properties after washing the finished fabrics 5 times. There was some reduction in flame retardance properties of finished silk fabrics after washing showing that the finish is not completely durable.