



## EDITOR'S CORNER

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After a brief hiatus, Fine Finish Newsletter has made a comeback. A booming economy has to be supported with a cutting edge technology and it is extremely essential that collaboration should happen on multiple fronts. Associates of our organization have made a sincere effort to contribute many articles in this edition of newsletter.

Niche marketing is extremely necessary to support robust growth and Fine Finish Organics Pvt. Ltd. strives to be the best amongst all. We have added excellent equipment to our portfolio and it has been a fruitful period for all our associates including our fellow colleagues, customers, suppliers and society at large.

Medium and Small Scale enterprises create maximum possible employment opportunities and it is extremely essential for a booming economy like ours to scale multiple peaks. All of us have to transcend many barriers and work unitedly to maintain dignity of labour and workmanship.

We all wish you a very happy, safe and a competitive work environment.

**HAPPY READING!!!**





## GST - OVERVIEW

On 1<sup>st</sup> July 2017, India ushered in an era of major Tax reform with the launching of Goods and Services Tax (GST). Though the initial concept of levying a universal Tax on Goods was born around 35 years ago, it was in year 2002 that GST got its name and was formally accepted for study on its implementation. After 15 years of consultations, confrontations & negotiations, it has become a reality. GST promises to simplify the complex Taxation system as it has replaced 17 types of indirect taxes, cess and surcharges enforced by Central & various State Governments like Excise Duty, VAT, Service Tax, Entertainment Tax, Entry Tax etc. GST has many unique features and new concepts listed below.

GST, for the first time and to great extent, justifies the term “One Nation, One Tax’ with uniform rates applicable on identical category of Goods & services across all states of India. This will make costs of Goods and Services stable everywhere in the country.

1. GST is the first Tax to claim input credit, payment of supply of Goods & Services received has to be made within a prescribed time period and its detail to be furnished in the audit.
2. GST is the first Tax in which Central & State Government will split the revenue from a single & same invoice. This will remove hassles of making and maintaining multiple invoices for the multiple taxes.
3. With the introduction of GST, a long overdue demand of ending the practice of levying tax on tax which prevailed during the excise & VAT regime has been met. This important feature makes it widely acceptable.
4. Similarly, the RSP & MRP based levy which has been vogue for excise duty for the last 3 decades would no longer be relevant for the valuation of goods in the GST regime as it envisage tax on actual transaction value.

**Industry & Business community has welcomed GST with lots of anticipation. Any new law when introduced brings confusion and uncertainty with it and GST is no exception. Let’s hope, GST lives up to its reputation of being Good & Simple Tax.**

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## NEW PRODUCTS

### PHENOFINE 4100

Phenofine 4100 is resol based phenolic resin offered as a solution for fire retardant and ablative composite prepreg manufacture. It is used in electrical and defence applications. Phenofine 4100 is suitable for manufacturing of high temperature resistant, high performance, chemical resistant composite with carbon fibre which can be either cured at room temperature or at elevated temperatures, depending on catalyzed or non catalyzed formulations.

Phenolic resin systems generate water as a reaction by product via condensation reactions during curing at elevated temperatures. In the fabrication of fibre reinforced phenolic resin matrix composites, volatile management is crucial in producing void free quality laminates. Phenofine 4100 has more than 60 % non-volatile content.

Prepregs made using phenolic resin have excellent fire resistance, good temperature resistance, low smoke and toxic emissions, rapid cure and ease of processing. Phenofine 4100 has a pre prepregging temperature of 60°C and a cure temperature of 180°C

The role of phenolic resin in the ballistic component based on aramid or Ultra High Molecular Weight Polyethylene is primarily that of marginal binder which easily fractures or delaminates on projectile impact and allows projectile energy to be absorbed by high strength and high modulus fibre.



## FINECOAT EP 210EN

Finecoat EP 210EN has been developed as a single component epoxy zinc rich paint. It cures at room temperature (above 10°C). The dried film of Finecoat EP 210EN contains ~90% zinc because the zinc dust used contains more than 97% metallic zinc.

Epoxy zinc rich paints are the most preferred products for corrosion control. Finecoat EP 210EN primer has a long life of 10-15 years on steel surface subjected to severely corrosive, marine, industrial environment. It provides sacrificial cathodic protection to the steel substrate. For this protection to occur, zinc particles must touch each other and the steel substrate providing electrical contact. Finecoat EP 210EN can be used as the first coat in systems complying with BS 5493 for obtaining 10-20 years of corrosion protection in exterior exposed polluted coastal environment. Other applicable standards are ASTM F 718-85 and AS 3750.9- 1994. Optimum zinc loading is 90 % by weight, providing a film with sufficient zinc particles and contact to provide corrosion protection.

While the corrosion protective performance of zinc rich coatings is often attributed to sacrificial protection, it is important to recognize that the protection mechanisms are far from complex. After application, zinc rich coating will be a continuous film, which effectively isolates the substrate from the environment. Once a defect is made in the coating, which exposes the substrate, the zinc rich coating provides certain amount of sacrificial protection. This protection depends on the amount and type of moisture present, electrical conductivity of zinc particles to each other and substrate and purity of zinc. As particles get consumed, the protection is reduced until the zinc is consumed or electrical continuity is lost. The compatible top coats over Finecoat EP 210EN are epoxy, chlorinated rubber, polyurethane and heat resistant coatings.

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## NEW TESTING FACILITIES

### Zinc content in zinc rich coatings- ASTM D 6580

Fine Finish Analytical Laboratory has established the facility for determining percentage of zinc coating in zinc rich primer by use of differential scanning calorimeter (DSC). The standard used is ASTM D 6580. This test method covers the determination of metallic zinc content of both zinc- dust pigments and of dried films of both inorganic and organic zinc-rich coatings.

The widespread use of zinc rich paints and their economic advantages compared with the technical methods of protecting steel from corrosion are being discussed across the globe. This newest method of applying metallic zinc coatings to steel has grown enormously in popularity during the last decade and has found varied applications in coating of oil tankers, oil and sulphur rigs, offshore oil drilling wells as well as for routine protection of bridges, railway rolling stock and steel work of chemical and industrial plants.

Although zinc paints require good surface preparation, carefully controlled application and properly engineered over coating but comparatively high initial cost of achieving this is compensated in reduced maintenance in subsequent years. In order to maintain the longevity of the zinc paint, it is also necessary to estimate the percentage zinc coating. This test method is useful in determining amount of metallic zinc in zinc dust pigment and in dried films of both organic and inorganic zinc rich coatings.

Zinc Rich Paints are those paints which comprise more than 90 % metallic zinc in dry film. The high amount of zinc provides a sacrificial cathode effect.

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## **COMPRESSION TESTS**

A compression test is any test in which a material experiences opposing forces that push inward upon the specimen from opposite sides or is otherwise “compressed”, “squashed”, “crushed”, or “flattened”.

### **Purpose of Compression Tests:**

The goal of a compression test is to determine the behaviour or response of a material while it experiences a compressive load by measuring fundamental variables, such as, strain, stress, and deformation. By testing a material in compression the compressive strength, yield strength, ultimate strength, elastic limit, and the elastic modulus among other parameters can all be determined.

### **Types of Compression Tests:**

- **ASTM D 6641 Compression Testing for Polymer Matrix Composite Laminates**  
ASTM D6641 establishes a procedure for measuring the compressive strength and stiffness properties of polymer matrix composite materials using a combined loading compression (CLC) or comparable test fixture. During the testing process, compressive force is introduced into the specimen by combined end- and shear-loading.
- **ASTM D695 Compression Testing for Rigid Plastics**  
Ridged plastics such as unreinforced, reinforced and high-modulus composites can be tested for quality using a variety of tests, including compression tests. One of the more common methods of compression testing is ASTM D695. This test is useful for determining the modulus of elasticity, yield stress, deformation beyond yield point, and compressive strength.
- **ASTM D 3410/ISO 14126 Compression Fibre- Reinforced Plastic Composites Test Machine**  
ISO 14126 outlines procedures for determining the compressive properties of fibre-reinforced plastics composites in the in-plane direction. Two methods are detailed in the standard. Method 1 uses shear loading of the specimen and Method 2 uses end loading or mixed loading of the specimen. Both methods require different gripping fixtures. One type of gripping fixture used is the Celanese-type fixture & other one is IITRI Fixture.





## **TECHNICAL ARTICLE**

### **NANOCOMPOSITES**

A nanocomposite is a matrix to which nano particles have been added. These particles are added to improve property of material. The properties of nanocomposites have caused researchers and companies to consider using this material in several fields. Epoxy containing carbon nanotube can be used to manufacture nanotube polymer composite windmill blades. This results in strong but lightweight blade which makes longer windmill blades practical. These longer windmill blades increase the amount of electricity generated by each windmill.

Researchers have found that adding graphene to epoxy nanocomposites may result in stronger and stiffer components than epoxy composites using a similar weight of carbon nanotubes. Graphene appears to bond better to polymers in the epoxy, allowing a more effective coupling of graphene into the structure of composite. This property could result in the manufacture of components with higher strength to weight ratio for such uses as windmill blades or aircraft components.

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## TRAINING & CONSULTANCY

Fine Finish Training School (Division of Fine Finish Organics Pvt. Ltd.), is one of the esteemed training provider in India. *Fine Finish Training School* has conducted training programs on-

- ✓ Laboratory Management System and Internal Audit ISO/IEC-17025:2005
- ✓ Uncertainty of Measurement
- ✓ Method Validation



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## FORTHCOMING TRAINING PROGRAMS

Sr.No	Course Code	Duration (Days)	Title of Course (All courses are designed to have practical orientation)	Dates	Days	Venue	Course Fee*	
							Domestic	
							Non Res (Service Tax Extra)	Res (Service Tax Extra)
1	FFOPL/LMTS/12/17-18	One	Method Validation	Aug 18, 2017	Friday	Fine Finish Training School	₹. 9,200/-	—
2	FFOPL/LMTS/12/17-18	Three	Measurement of Uncertainty	Aug 21 to Aug 23, 2017	Monday to Wednesday	Fine Finish Training School	₹. 11,300/-	₹. 16,100/-
3	FFOPL/LMTS/13/17-18	One	Electrical Insulation	Sept 19, 2017	Tuesday	Fine Finish Training School	₹. 9,200/-	—
4	FFOPL/LMTS/14/17-18	Four	Laboratory Management System and Internal Audit as per ISO/IEC 17025:2005 & Proposed changes to ISO/IEC 17025	Sept 25 to Sept 28, 2017	Monday to Thursday	Fine Finish Training School	₹. 14,000/-	₹. 21,200/-
5	FFOPL/LMTS/15/17-18	One	IPR	Oct 6, 2017	Friday	Fine Finish Training School	₹. 9,200/-	-
6	FFOPL/LMTS/16/17-18	Three	Project Management	Oct 26 to Oct 28, 2017	Thursday to Saturday	Fine Finish Training School	₹. 11,300/-	₹. 16,100/-

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## PROFICIENCY TESTING

### ONGOING PT PROGRAMS

Sr. No.	PT Scheme No.	PT Item	Month / Year
1	FFOPL-PT008 (V)	Compression Set of Rubber	August 17
2	FFOPL-PT-001 (i, ii, iii)	Tensile properties of plastic	August 17
3	FFOPL-PT-020 (i, ii, iii, iv)	Tensile, Ultimate tensile strength, yield strength and % elongation of metal	September 17
4	FFOPL-PT-021	Chemical testing of metal by Spectrometry	September 17
5	FFOPL-PT008 (i, ii)	Tensile properties of rubber	September 17
6	FFOPL-PT008 (xiv)	Ash content of rubber	October 17
7	FFOPL-PT-012 (i)	Oxidation induction time	October 17
8	FFOPL-PT-001 (iv)	Density of plastic	November 17
9	FFOPL-PT-009 (i)	Shore D hardness	November 17
10	FFOPL-PT-009 (ii)	Shore A hardness	December 17

For more Proficiency Testing Programs please check our website:

<http://finefinish.net/wp-content/uploads/2015/11/PT-Scheme-calendar-Revision-12.pdf>

You can also contact on 022 6501 2228 / 2741 2923 or email us on [proficiency.testing@finefinish.net](mailto:proficiency.testing@finefinish.net) / [seema.rajpure@finefinish.net](mailto:seema.rajpure@finefinish.net).

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