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KEC International Limited - Cable Division

FROM THE ED'S DESK

Dear Friends,

We are coming to the end of one more challenging Financial Year. The economy has been extremely sluggish and choppy, with no clear direction. And with the addition of capacity in our industry, the demand-supply gap has increased, resulting in an all round depression.

We have completed our transition from Thane to Vadodara smoothly, and now boast of the newest HT/EHV facility in the country, with a very large number of 'first in industry' offerings. Through our Knowledge Sharing Program 'Infinity', we invite you to visit, and return enlightened, with a unique and memorable experience.

Quality, Safety and Environmental protection will continue to remain our areas of focus in the coming year, together with Customer experience and Exports thrust. Our modern Instrumentation Cables facility at Mysore is at an advanced stage of installation and commissioning and our Sales force is in place. We hope these will help you to get full, timely and quality attention!

Best Wishes for the coming Fiscal.

Sincerely,
Nikhil Gupta

Let the colours of Holi spread the message of peace and happiness. We wish you a happy and colourful Holi.





SHORT CIRCUIT RATINGS

In cables, an important aspect is the selection of the optimum size of conductor to achieve most economical solution in terms of cost and subsequent operation of the cable. While, the continuous current carrying capacity is paramount, other factors such as voltage drop, cost of losses and ability to carry short-circuit currents must not be neglected at the time of selection. The most convenient way to establish the rating for a particular cable design is to calculate amperage which can be carried continuously under prescribed standard conditions. Appropriate factors may then be applied to cater to the actual installation conditions and mode of operation. Two important parameters in establishing ratings for standard operating conditions for particular installations are the ambient temperature and the permissible temperature rise.

It is always important that the conductor size needs to be decided by its ability to carry short-circuit rather than sustained current. During a short-circuit there is a sudden inrush of current for a few cycles followed by a steadier flow for a short period, normally between 0.2 and 3 seconds, until the protection devices start operating. During this period the current falls off slightly due to the increase in conductor resistance because of temperature, but generally for calculation purposes it can be considered to be steady.

At the commencement of the short circuit the cable may be operating at its maximum permissible continuous temperature but the

increase in temperature caused by the short circuit is the main factor to be considered in deriving acceptable ratings. Generally in such condition, the current is twenty or more times greater than the sustained current and it produces thermomechanical and electromagnetic forces proportional to the square of the current. Due to this, the stresses induced will themselves impose an operating limit unless they are designed to contain adequately by the whole installation condition. Therefore it is important to have information and check on cable design, joints, terminations and installation conditions.

TEMPERATURE

During short circuit condition, as the time involved is short and cooling follows rapidly, the cable insulation is supposed to withstand much higher temperatures than operating temperature. Hence insulation material should be selected accordingly. Similarly, other materials and components used in cable should also be selected such that they are able to withstand the temperature rise. In case of armoured cable, the outer sheath material must withstand the rise in temperature in armour wires as it is in contact with them. In the absence of armour the outer sheath should be treated as insulation. In other words, if the insulation can not withstand the short circuit temperature, there is no point in considering temperature withstand capacity of other materials.





SHORT CIRCUIT RATINGS ... contd.

Short-circuit ratings can be calculated using either the adiabatic method in which it is assumed that the entire heat generated remains trapped within the current carrying component or non-adiabatic method which allows for heat absorption by adjacent materials.

ADIABATIC METHOD

The adiabatic method is used when the ratio of short-circuit duration to conductor cross-sectional area is less than 0.1 s/sq. mm. In case of screen wires, as the short-circuit duration increases the loss of heat from the conductor becomes more significant. In such cases the non-adiabatic method can be used to provide a significant increase in permissible short-circuit current. By ignoring heat loss, an equation can be derived which equals heat generated to heat absorbed into the current carrying component considering multiplication of mass, specific heat and temperature rise capability of material used.

NON-ADIABATIC METHOD

In non-adiabatic method of calculation the thermally permissible short circuit current allows the heat transfer from the current carrying component to adjacent materials. This method is valid for all short-circuit durations and provides a significant increase in permissible short-circuit current for screens, metallic sheaths and any other conducting materials. Alternatively, short-circuit current calculated by the adiabatic method is multiplied by the modifying factor which takes into account the heat lost to adjacent materials

to obtain the permissible non-adiabatic short-circuit current. The modifying factor is normally 0.7. Exceptionally, in a condition where a current carrying component is completely bonded on one side to the outer non-metallic sheath then a factor used should be 0.9.

ASYMMETRICAL FAULTS

A short circuit between the phase conductors is termed as symmetrical fault and fault between phase conductor and metallic sheath or armour is asymmetrical fault. In the case of asymmetrical, additional factors have to be taken into account because the current is carried by the lead sheath and/or armour. Lead sheath and/or armour is liable to get damaged due to sudden heat and rise in temperature, hence this should be controlled by adequate design of outer sheath, which is in contact with it. Unless otherwise stated, the rating is considered for a fault duration of 1 s. For other duration, the rating values should be divided by the square root of the time in seconds. In the case of lead sheathed and wire armoured cable the short circuit current is shared between between the two.

Ref : BICC Handbook ... continued

Winning is not a sometime thing; it's an all time thing. You don't win once in a while, you don't do things right once in a while - you do them right all the time. Winning is a habit. Unfortunately, so is losing.

– Vince Lombardi

INFORMATION TECHNOLOGY AT RPG CABLES

We are living in a world which would surely come to a standstill if deprived of mobiles and information technology.

At RPG Cables, we figured that we cannot be left behind in this 'rat race' and decided to catch up with cutting edge information technology.

IN THE LAST ONE YEAR WE HAVE IMPLEMENTED

- Marketing Enquiries Software – “Smart”, MS SQL and dot net based.

This tracks all customer enquiries from the conception of the project to offers, negotiations and receipt of your valued order, while keeping track of raw material prices and cable constructions. It ensures prompt response to your enquiries in real time.

- Design Software – “Squad” MS SQL and dot net based.

This helps in construction of unique custom made cable designs required by our customers, according to their specific requirements, with GTPs, cable construction drawings and manufacturing specs, and finally links to the ERP.

- ERP Software: Oracle based JD Edwards

This comes into play once we receive a customer order, until payment is settled, and tracks material through the procurement, manufacturing and invoicing cycle. It has a single database and on line tracking of the entire supply chain.

- We are now in the final stages of implementing shipment advice to our customers so they have advance notification of products that are in transit to their premises.



Our facility at Mysore





FROM THE NEWS DESK

BANGALORE EXHIBITION:

We recently participated in ELASIA - 2013, exhibition promoted by Electrical Consultants Association ELCA, at Bangalore. In entire South India, this is a first of its kind which is supported by practicing Electrical Consultants Association. There were over 100 exhibitors from Electrical Industries. More than 400 serious footfalls were there in our stall. We got an exposure to customers who were not aware of our presence in the market. Renowned consultants like Potential, RSP Consultants, TCE etc. visited our stall and had discussions on our activities.

- RPG Cables Kolkata Sales office is on the move!

Our new address:
12, Park Street,
Queen's Mansion, Flat - 22E,
1st Floor, Gate No. 3,
Kolkata - 700 016

- We have appointed Mr. Sanjay Kharait, Senior Manager - Sales & Marketing, as our representative at Bhopal. You can contact him on 08878146664.





REACHING OUT...

KNOWLEDGE SHARING THROUGH "INFINITY"

In our previous issue of C2C, we had covered the subject of conducting knowledge sharing program with our customers. The idea was to help our customers in their better understanding of cables which, in turn, would help them design their cabling systems more efficiently.

We are happy to inform our readers that we have already had three monthly sessions of "Infinity" at our State of the art facility at Vadodara where we have had the pleasure of hosting over 75 customers across the country, who have given us extremely positive feedback, both about our system, people, facility and the program.

As a consequence, we have decided to make this a monthly program and invite your participation.

The Infinity Calendar for next quarter is as under:

May 21,2013 (Tuesday)
June 20,2013 (Thursday)

Please send in your nominations for the program which will be on 'first - come - first - served' basis to your preferred day.

If you would like to cover any specific subject, please write to choudharynd@kecrpg.com.

Kindly note that other than travel, these programs are absolutely free of cost.

LINK WITH US ON LINKEDIN

We are happy to inform our readers that we are now present on in LinkedIn. As you are aware, LinkedIn is a social media which helps us to connect to our customers and others who have a professional interest in our products. It also helps to reach out to their needs and answer their queries within no time. It would also be a platform to:

- Keep in touch with our customers about our business
- Get answers to tough business questions with a little help from our technical people
- Get our quarterly newsletter C2C, corporate brochures, technical catalogues for your handy use
- Get guided by our experts in your requirement of cables
- Be posted on our knowledge sharing program, 'Infinity'
- Be aware of upcoming events
- Get upto date on the developments in the cable industry

Keep watching this space for more exciting initiatives!

For additional information/details/queries and to subscribe to C2C please write to:

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