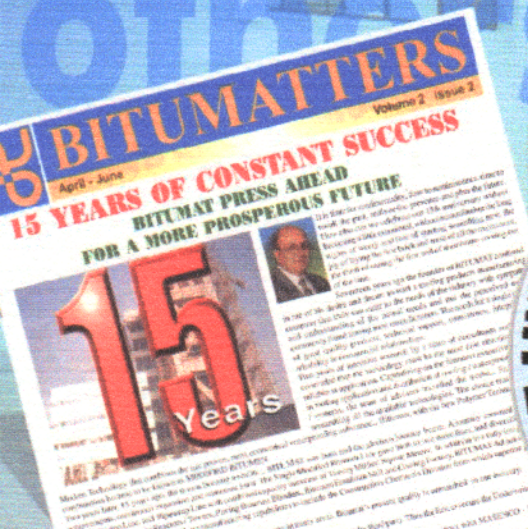


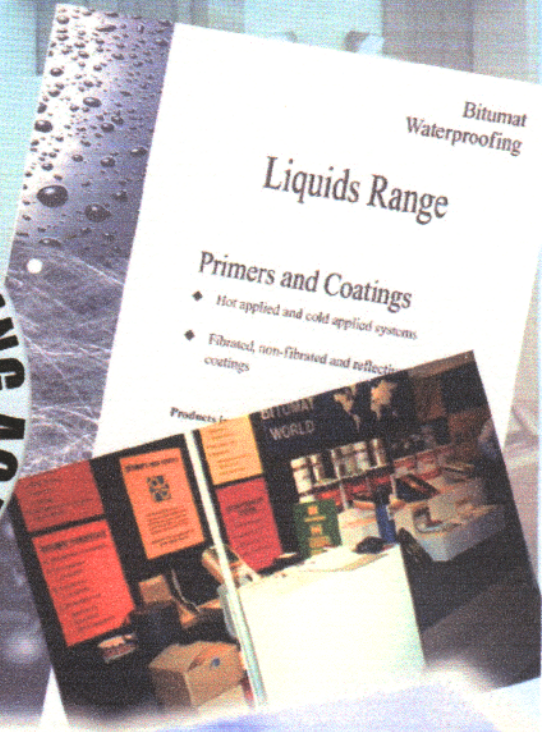
marketing@bitumat.com

CONVENTION EXHIBITION



BITUMATTERS
Volume 2 (Issue 2)
April - June
15 YEARS OF CONSTANT SUCCESS
FOR A MORE PROSPEROUS FUTURE
15 Years

The magazine cover features a large '15 Years' graphic and a photograph of a man in a suit. The text highlights the magazine's 15th anniversary and its focus on the roofing industry's future.



Bitumat Waterproofing
Liquids Range
Primers and Coatings

- ◆ Hot applied and cold applied systems
- ◆ Fibred, non-fibred and reflective coatings

The brochure features a photograph of a person at a trade show booth and a close-up of a textured surface with water droplets.



BITUMAT
آبیتومات
AQUASHIELD

The image shows a yellow and blue can of Bitumat Aquashield waterproofing product. The can has a decorative pattern and the Bitumat logo.





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For more details contact:



BITUMAT MARKETING SERVICES DEPARTMENT
c/o The Chief Editor
New Corporate Office, Jizan Street
2nd Industrial City, Dammam 31462
Kingdom of Saudi Arabia

After the introduction of Bitumat to the delegates, the first presentation was initiated by Mr. Nimri who introduced the concepts of roofing across the world. It is surprising that inspite of the vital role of an effective watertight roof, not much of importance is given to this even in prestigious institutes of Architecture and designing! Apity indeed!

After the brief initial session, the delegates went to the Bitumat facilities. Braving the heat, the delegates went over to the various facilities like the construction chemicals production area, the lab, the membranes producing factory and the Q/C and the R&D department.

This exercise actually saw the delegates coming closer to the product. This was the first time they were able to give a firm picture to what they had imagined earlier. Now, all that they had heard about earlier was taking form. They were able to identify the product in its reality.

Seeing the manufacturing process was an eye opener to many. They were able to appreciate the systematic production process that Bitumat has adopted. After all being an ISO certified company is an achievement in itself. The delegates had many queries and they were not reluctant to put them forward. And they got prompt answers! The delegates spent a lot of time in the Laboratory with Mr. Asad. He was not performing any magic! But still he held allspellbound! After all it was the first time the delegates were actually seeing how the



membrane is tested for Softening point!

They could actually see the small metal ball drop in the beaker! "So that's how the softening point is tested!" remarked Sharad. But he still felt that he needed to know more about what is the difference between the heat resistance and the softening point. The very sight of a piece of bituminous membrane being stretched in front of your own eyes was actually fascinating! "I could never have visualised it this way" stated Eng. Amjad Najjar. Quite right! If any building moved that amount, I would be miles away from that! Pratap Singh Rautela educated the delegates on what is Synroof Hi-build all about.

Obviously a wonderful and a versatile product drew the attention of the delegates. Mr. Nasser Al Khoweiter was



Mr. Nasser Al Khoweiter was more interested in product and posed many intelligent questions to the instructor. Just shows that even a heart afternoon meal cannot dull the instincts and reactions of the intelligent and interested!

The last session of the day saw Jaleel Agha and Asad Raza dwelling on a wonder product-The New BITUPATCH The extremely versatile and resilient product that can really rejuvenate the dying and gasping road life cycle! Not many in the region can boast of such a product. The lovely audiovisual presentation held the attention of the delegates even as the evening wore on.



The IXth BIRA seminar got into motion on the 17th morning. The BIRA room witnessed a heavy rush of delegates and within a short time, the room was packed to capacity! 22 delegates from all over the world had converged in! Enthusiasm and expectation was writ large on their fresh faces. Braving the jet lag was Adam Sharp from Thailand. The change of time could not take away the sharpness of Mr. Sharp! and soon Mr Sharp was known as the Sharp one! But then with the Sun going in for a well deserved rest, Adam Sharp also starting to loose some of his sharpness and with each passing

moment lethargy was taking charge and by the time the clock struck Seven, Mr. Sharp was all but OUT! But the culinary lure was too strong and it rejuvenated his sharpness and there he was right through till midnight savouring the lovely traditional spread! Not far behind was Ronnie who flew in from Malaysia. And he was sharp right till the time he had sipped the last drop of the lovely Arabic "Qahwa"! And then he dropped! And when we were coming back from the traditional Heritage Village, there was the young fellow who thought he was "flying" his Tayyara on the road and he almost rammed into our little bus!



And the man from Australia shrieked" I have a wife a few thousand miles away"! Fouad was excited and outraged. He quipped that back home the speed limit is 60 Km hour! How I wished that I could have got out of the bus and grabbed the young, impetuous driver and ship him off to Australia! For that matter, we could also request our hotel authorities to send their driver also! Perhaps now I know why the old Britishers(about 200 years back) bundled the law breakers to Australia! Set them right!

Young Mr. Pande could only look at the lovely chicken and the pulsating grills! He settled for some vegetarian which was probably causing more drooling and salivation than the chicken! The food at the Heritage village was really exciting and inviting. And most of us forgot that our protruding bellies were coming in the way as we prepared to squat on the exotic rugs! But Pratap did not forget. He never came! However, in spite of the frequent change in posture, we relished every morsel. Ah! And then as a matter of tradition, we went up the little museum, tucked away on the top. Yes, it houses many ancient items, some as old as 300 years. Our foreign delegates would surely go home richer..culturally, I mean!

The lovely houses along the posh Dana area attracted the attention of Puttopom. There was a glow in his eyes as he enquired the cost of one of those that he saw. Puttopom was conquered. If circumstances were more in his favour, then we could see him cosily snuggled in one of these palatial houses.



The *Bitumat's Official BIRA Daily Newsletter*

BIRAmatters

Daily Musings During The IXth BIRA

Volume 2, Pg. 1

June 19, 2001 Daily Issue



them from being attentive in this rather crucial session. A combination of an assortment of mock ups and vide films added to the interest.

As the evening wore on, Talal El Khatib felt lethargy attempting to overpower him. So off he goes to the Tea counter! How this black, unattractive cup of tea has saved many from an unwanted siesta! This wonderful thing has really helped many an engineer ward of sleep and maintain alacrity and areceptive mind.

The second day of the BIRA was a revelation to many! The day began with Mr Nimri talking about the various roofing concepts and practises around the world. This was indeed a very thought provoking and an illuminating experience. "Prior to coming for this seminar, I did not think that I would be exposed to such minute details:", said a visibly impressed Eng. Nasser Al Khoweiter. Thank you, Mr. Khoweiter, for it is such expressions which motivate us to continue in our pursuit. "I think what Mr Nimri has said today was just excellent and I would love to have a copy of his presentation", said an excited R.C. Pande from Oman. At BIRA we give the full binder to each delegate, a very very comprehensive binder which talks in great detail about almost

all the aspects of roofing and waterproofing. But then we are all keen on shortcuts and shirk from reading volumes of written work! Anyway, hope I can fulfill your request.

The entire session was based on extensive research collected over 35 years of dedication and commitment. The session discussed the pros and cons of various alternative waterproofing materials and the growing popularity of Modified bitumen.

Mohammad El Khub presented his session on Roofing Construction. A very vital subject indeed and Khub kept the delegates glued despite the fact that they had proceeded to the seminar room straight after a sumptuous meal! The chicken in their bellies could not preclude

Kudos! to the inventor of tea! The last session of the day saw Ramadan Iskandarani and Asad Raza give a power packed performance on Bitumat Products. The duo delved at length and discussed a failry large range of Bitumat products., "This is indeed a very educating session, but I am afraid I am now almost virtually finished"! voiced Mr. Hadi from Yemen. Wiping his brows with an almost soaked handkerchief, Ali Al Hadi threw up his hands and proposed that he will answer the question paper for Ramadan only tomorrow! And Ramadan yielded. The session was called for the day and the rather relieved delegates trudged their way to the waiting bus. Looking forward to a well deserved rest !

The hotel was in a generous mood. They decided to add sweetness to the wary delegates! A large cake was awaiting them as they reached the hotel and there was a gala time as they all celebrated!

A refreshing change from the heavy duty learning sessions of the day! And finally they reached the bath tub! Throwing caution to the winds, SPLASH! into the tub! and RELAX!

Rashid Mall has an uncanny power to attract and like the Pied piper, we all zeroed in on the Chinese restaurant. Safwan also succumbed to the temptation of this exotic mall! He was unable to join us at the Heritage Village but this time he was there. But to be honest, I never saw him there! No! Not that he is invisible, it's just that he was sitting in the other section. I hope that he enjoyed the food more than I did!

The dining table was capable of tricks. A section of the table could be revolving and the fish was in the middle! A tussle and then with the help of our Kamal Al Sheriff I managed to win! An assortment of food revolved at the beck and call of every diner. But Ronnie NG (try pronouncing the Ng and



when You fail, contact me! I have finally learnt the correct pronunciation!) was not very impressed and was unequivocal in airing his opinion that this was not the way he would be served in a Chinese restaurant in Malaysia. But then correct serving or not, we waited very patiently for the Chinese tea. It finally arrived after Ali Al Hadi was gearing up to enquire about its whereabouts. But the wait was not worth it. The tea was rather insipid or perhaps, I do not have a tongue for it.

The Mall was very attractive and soon the younger of the delegates were off! Looking around the lovely arcade was a joy for all and perhaps unimaginable for many foreign delegates. The exciting escalators crisscrossing as they glide up and down was a stunning sight indeed. The enthusiasm of the shoppers is

remarkable as they went in to shops after shops, never tiring! Finally the dinner was through and as we were waiting patiently, Abdul Khader Jallab of BMC Dammam took us all into the world of humour. And yes, he did set the tone indeed! He joked about the efforts of a man as the years advanced. Our Jaleel Agha was in a reminiscent mood and recalled a hilarious experience in Thailand. How the cabby gave an insight into what an advancing mans head movements actually indicate! When he saying NO he is actually nodding his head! Yours truly also added to the flowing current of humour.

Finally we left the mall quite confused. Which exit to take? Was this a design by the designers to confuse us or was it by accident? Any guesses.



**SYNROOF
HI-BUILD**
CAN REALLY STRETCH!



The

Bitumat's Official BIRA Daily Newsletter

BIRAmatters

Daily Musings During The IXth BIRA

Volume 3, Pg. 1

June 20, 2001 Daily Issue

The third day of the IXth BIRA was a mixed bag of a field visit and some mathematical calculations. The engineers found it very easy but the others had to really tax their grey matter as Emad Abdul Azeem presented his paper on Estimations. Ali H. Al Mohammad, an engineer from SEC-ERB, Eastern Province was carefree during this paper as he found all the calculations rather easy. Elementary, Dear Watson! But for those who left mathematics years ago, it was an ordeal as old memories flashed! The maths teacher arrives on the scene and fear grips! But Emad has a very friendly way of presentation and soon he had established a rapport with even those who are mortally scared of figures! Roof surveys and area calculations are an important consideration for effective performance especially in forming a proper and effective proposal. Making a good proposal is important not only for the client image building but also for proper costing and pricing for the company.

Most of the delegates were still in the hangover of the pulsating lunch at chili's. All along the drive they were savouring the exotic after taste

and were far from the possibilities of a "heavy duty" session! Some even dosed off on the way....with dreams of what they saw at the restaurant! More about this later.

Following the session by Emad, Jaleel Agha took charge. And what a task he had! He presented System selling to Architects. Now this may sound rather fundamental and elementary, but the reality is that it involves careful planning and thinking. Now comes the role of inter-personnel dynamics and this is what makes the situation difficult. How do you approach a Technical buyer? A buyer who is considered rational and one who is expected to do an extensive comparative study before nodding in your favour. Jaleel adopted a flexible style and looked at the various ways that system selling could be achieved. Although this was the last session for the day, it must be complimented that the delegates bore everything very stoically and kept on absorbing, minute after minute! All credit to the dedicated delegates who were all there right there till the very end. Just shows what a difference can be made if there is commitment and dedication! Hats off to these wonderful

delegates! Bitumat salutes you all! Let us compliment each one of you personally, you deserve it:

Ali Al Hadi from Yemen

Ronnie NG Say Heng
from Malaysia

Adam Jeffery Sharp from
Thailand

Chayapol Puttopom of
Thailand

Fouad Khraim from Australia

Sharad K. Pande from Oman

Mohammad Amer Yasin
from BinTami, Jeddah

Talal El Khatib from
BMC, Jeddah

Amjad Najjar from
BinTami, Riyadh

Safwan Murad from
BinTami, Riyadh

Hossain Sohail Ahmed
from SEC_ERB Eastern
Province

Ali H. Al Mohammad
from SEC_ERB Eastern
Province

Ahmed Al Shaikh
from SEC_ERB Eastern
Province

Munir Al Maskeen
from SEC_ERB Eastern
Province

Abdul Khader Jallab from
BMC Dammam

Mahmood Al Khodary from
BMC

Faleh Saad Al Rajheh from
SEC Jubail

Nasser M. Al Khowaeter from
SWCC Azizayah

Abdullah Al Saleh from
SWCC Azezayah

Mohammad Al Faddah from
Al Zuhair Al Khober

Hussain Al Sulaat from
SEC_ERB Eastern Province

The morning saw a visit to a site where some actual installation was witnessed. We must thank our esteemed client, M/s ATCO for organising this installation visit. It was very kind of them to have shown the application to our delegates. The delegates were able to finally see what they had been studying all along. They saw how the torch is lighted and how the applicator approaches the role and how he begins the torching. For the first time many of our delegates saw how the roof looks from the point of view of an applicator. They also felt the heat that is there on the roof top and empathise what the applicator must be going through! And then the bus driver played truant!

From the site, the delegates went over to the Aramco Exhibit. And what an exhibit it is! All the people were going ga-ga over it!

They were floored! Yes, indeed this is indeed a wonderful exhibit. Not only the foreign

delegates, even the locals were extremely impressed. Certainly, it impresses one and all.

The drive to the causeway was refreshing as the lovely breeze flowed past. As the bus approached the causeway, there was an excitement amongst all the people. The lovely blue waters all over, showing the strong belligerence that it harbours as the mighty waves swept all over!

The ascent up the restaurant was breathtaking! As one stood on the top, he saw the beauty of nature at it's best! Wow! What a sight! You can see two countries at the SAME TIME! Bahrain on one and Saudi On the other. It is a sight which none of the delegate will forget for years to come, perhaps reminesing when telling stories to their grandchildren!

The "night life" of the BIRA continued as per the tradition. We went over to the famous sea food joint. and fished around with the best fishes in town! The red snapper was one which was really good to look at but lost out to the Catfish.

The last day saw yours truly presenting a session on

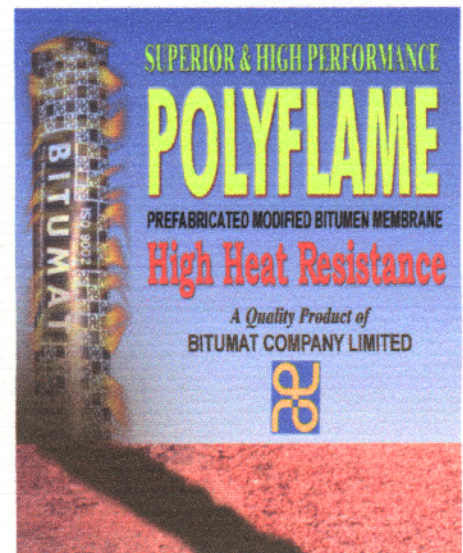


BITUPATCH
ROAD PATCH

Re-roofing and preventive maintenance. A very simple but often underrated issue! I always said "a stitch in time saves nine". A little care today and your application will live longer. A proper repair is a vital clog in the wheel of maintenance.

Jaleel Agha came back to talk about the Bitumat Distributor Organisation and Mohannad showed the world of Bitumat. Major projects around the world were seen. Just shows that a good product will always find it's own market.

The traditional Arab Lunch was the feature of the day! This cuisine certainly has few parallels! Lastly, all the BIRA team is really grateful to all of you for being so wonderful and cooperative. We believe that we could not have achieved what we have without the excellent support of each one of you. And yes, if any errors have been committed, we request that you expunge them from your memories! Carry only the pleasant memories.. they are always bringing joy when recollected in tranquility!





The Bitumat's Official BIRA Daily Newsletter

BIRAmatters

Daily Musings During The Xth BIRA

Volume 2, Issue 1

Oct. 8, 2001 Daily Issue

The first BIRA session in the new corporate office got underway just a wee bit past the scheduled time. The BIRA room looked majestic and grand in the theatre style setting.

It was indeed an extremely pleasant and motivating sight to see so many intelligent and smart "heads" as the session got underway. When I say smart heads, I really mean it. All the delegates who have come are men of caliber and substance and we are honoured by their presence. Our delegates are from India, Syria, Ethiopia, Morocco, Abu Dhabi, Algeria, Tunis, Nigeria and Qatar. Bitumat acknowledges their dedication and commitment and that they overcame numerous hurdles in their quest to be with us. We salute them!. The nearest ones are from our own Eastern Province and the far east one is from Malaysia. Since my Geography was never really worth writing home about anyway, I am presuming that Morocco is not as far as Malaysia. Again, I am also presuming that Abdul Rehman Al Tama's geography compares with mine and he will indicate consonance with my estimations. This Moroccan is in any case a very sporting gentleman and he kept his "cool" even when the "cooling" in the BIRA room was inducing



The new BIRA room.

physiological changes in his body so that the body remains warm. He bore stoically and gave way only after the session in the laboratory. Abdul Rehman's English is yards better than my Arabic and miles better than my French, we attempted to communicate "effectively"! Yes, a cocktail of English and Arabic with French thrown in to create a greater confusion!.

Following the initial introduction by yours truly, Mr. Riad Nimri had a go at the very receptive audience and I am sure that he was really enjoying it because it is always a pleasure to address an audience which is keen to imbibe, to absorb better than a sponge! After a short introduction to the roofing concepts and practices, the group "walked" in to the production side. Mr. Naeem took up the gauntlet first and addressed the delegates. With perhaps a wee bit of "butterflies" in his stomach, Naeem really sized the situation very well and led the group all over with the confidence and skill of a veteran! And this was Naeem's first venture independently, Bravo!

After seeing the lab and the production area for the Bitumat chemicals, we got into the bus with our Mohan at the controls. Somehow whenever Mohan is at the helm in the bus, I'm very relaxed.

Naeem had passed on the baton to Gopalan, and he ran his race equally well. We drove around the production area whilst Gopalan was providing a running commentary. Reminded me of Jasdev Singh, but then Hawari will say, Jasdev who? So then I will say Khalid Al Harban, ok, Ghouth? It is always very enlightening to see the path traversed by the product before reaching the end. And Ahmed Ali Nur was armed with plenty of queries. He posed interesting riders to Gopalan.



Having seen the oxidation area with the awesome towering tanks, the group reached the production area of the modified membranes. Once the delegates saw this, their eyes really lit up! They were excited to see the process of production, seeing how



In deep and pensive mood?

...Continued from Page 1

how the "white" reinforcement goes through various stages to end up as a "black" membrane roll on a pallet. Each member was keen to understand as much as they could so that they can use this newly acquired knowledge to convince their clients when back home! Armed with their fresh understanding, the delegates gait also indicated a new found confidence! No swagger but yes, a walk which indicated purpose. The "lion" did not roar but waited patiently. "Asad" was at his usual best in his own "den" and he was swift and purposeful. The delegates tried to hang on to everything that was thrown at them! This is where Mr. Hafeezullah Ghulam Mohammad from SPC, Abu Dhabi sent back a few to Asad. With his keen eye and a sharp ear to back his analytical propensity, Hafeezullah kept Asad on his toes! He was keen to "audit" as much as he could and was observed making keen notes on the finer aspects of R&D and QC. Following lunch, the delegates headed back into the BIRA room and then started the very interesting session on the concepts and practices by Mr. Nimri. Now was the hard core stuff being handed out and as Fahad Al Najrani said, "It was a fantastic session. So much was discussed and I was marveling at the knowledge of Mr. Nimri" and mind you this was inspite of the fact that the session extended well beyond sunset! Sajeed Munshi from India was equally fascinated at what waterproofing can offer!



The 10th BIRA delegates with the Bitumat staffs.

Perhaps the first time he realized that waterproofing is "Really technical"! The Dinner at the Saudi Heritage is always an eye opener for all. This time it was no exception. The rich setting makes dining an extremely enjoyable experience and the tired bodies forgot the trauma inflicted during the long day. With the fresh, sweet dates and the continuous supply of "qahwa", an ambience of relaxation and entertainment was created. And all enjoyed! The food on the traditional dining table was exciting the salivary glands to such an extent that holding on was

becoming an ordeal! And then there was the "jargir" leaves and Riad Hawari concentrated only on those. And he even invited "Asad" for a "mouthful". By the way, any idea why Riad Hawari grabbed the green leaves? The food carried us into a different world and forgot that the clock had struck 11 Pm! And we have another session tomorrow! And then we darted! Pratap is always shying away from attending the dinner at the Saudi Heritage. Any guesses why?



Edwin getting a test ready for the delegates.

"It has set the industry ablaze! it's Peer Less!"



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Have an Interesting Browse!!

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If you have any comments/inquiries about this issue, please address your correspondence to the attention of The Chief Editor.

Daily Musings During The Xth BIRA

Volume 2, Issue 2

Oct. 9, 2001 Daily Issue



Mr. Ramadan at his best.

The second day began with some one volunteering his opinion why our Pratap Singh avoids going to the Saudi Heritage restaurant. I shall discuss the opinion later when I also educate you what Riad Hawari has to say for his penchant for jarjir.

After a rather hectic first day, the second day saw Ramadan Iskandarani and Asad Raza addressing the delegates on the Bitumat Product range. They covered all except the chemicals. Obviously this is a very important session as the range of Bitumat products are discussed at length. The previous day's visit to the factory is really helpful at this stage as there is strong association with what they have already seen. And things fall into place much more easily and the speaker suddenly seems to be talking a lot of sense! And as a consequence the level of interest shoots up. And you can see all the delegates really enjoying the talk. And the icing to the cake is the lucid and free flowing presentation of Ramadan and Asad! And Yous Mohammad from Algeria also got into rhythm because Ramadan translated

effectively! No more looking sideways and seeking a favour.

Mohammad Buhary Akbar from Mannai, Qatar was his usual relaxed self. He used technology to his advantage and coolly put a very small tape recorder! In a true Wordsworthian style, he wants to "hear in tranquillity in the environment of Mannai" making sure that he can refer back when in doubt. Good thinking there!

Where Ramadan left, Pratap Singh took over and he finished the run very clinically and confidently. His session on Chemicals was heard in rapt attention and there were plenty of queries raised. I always believe that more the questions, the better it is. For it shows that people were



Delegates listening in rapt attention to Mr. Agha.

focused and keen.

Mohammed Naeem was equally brilliant and was quick and always had an answer to every question shot at him. Synroof Hi-build is really an excellent material and many delegates were very impressed with the multi faceted properties of this coating. Magdy Al Kady and Mohsen Ayoub from the Ministry of Education were very keen on this product. Apparently they had tried some coating in the past but which turned out to be a disaster. Well, a good and a standard producer always produces and sells what is true and claims only that much which it can satisfy. Well, it takes all sorts to make a world. Perhaps with Synroof Hi-build their search may actually end. Then the question answer session was really a very educating experience. All the delegates marked themselves (honestly, of course!) and then Pratap discussed the answers



Mr. Pratap and Mr. Naeem answering.

reading out the correct answers. Well, this was indeed a new exercise and in this way each one actually knew where he was wrong! See, teaching methods are always dynamic...no end to learning!

Lunch was with a combination of burgers from Mcdonalds. We all enjoyed the excellent fish-o-fillet and since the lunch was just the right type, no one felt heavv or drowsv and not back

...Continuation



Mr. Siidiqui and his team arranging lunch. to business right away. Just a nice hot cup of Tea and off for the session.

Asad Raza came back for his second innings and this time he paired with Jaleel Agha and they dwelt on the new products from Bitumat. Bitupatch is now a very potential product and from what they told the delegates, Bitupatch has already conquered South Africa and Bahrain. There seem to be many takers from the Emirates. Good going indeed. Although the Malaysians, Alias bin Mat and Khairuddin bin Abdul Razzaq have been very quiet and reserved, they expressed their appreciation for Bitupatch in very uncertain terms and voiced that it may be a run- away success in Malaysia.



Mohammad El Khub presented the very important session on New Roof Construction Systems. Really this is the crux of the affair. Which roof to select? Which system to go for and so on.



The new Bitumat Corporate Office.

The delegates were glued to their seats even oblivious of the fact that the sun had already set and night had set in! Carefully selected overhead slides by Khub were highly appreciated by all, especially Chabchoub Hafedh from Tunis. (I am trying to pal up with Chabchoub, just in case we hold the convention 2002 in Tunis!).

The Dinner at Baba Habbas was very balanced and I am happy that the cholesterol level will be kept in check! As usual, the fishes were unbeatable and really finger licking! And to top it all, the special jokes from Chabchoub, Khalid and Mondher sent Khub in high pitched guffaws! And soon the restaurant reverberated because the infection had caught on and everybody was emitting strange sounds, including me! Just to remind you, the jokes were in Arabic and Jaleel, Pratap and myself have a foggy understanding of Tunisian Arabic. Yet, we were laughing away to glory. Strange? Is it not?



The Moroccan & Tunisian connection?



Just to conclude, Riad Hawari handed me a bunch of green leaves and has advised me to take some and pass the remaining to others around me, especially Ghouth! I wonder why because I noticed a strange and suspicious looking grin on his face.. Based on my hunch, I have also sent some to Mohannad, his knowledge of such greeneries being rather immense although Khub was heard saying that the Algerians are very keen on herbs. So I have also sent some to Yous Mohammad, our delegate from Algeria. I shall call on him tomorrow to ask his opinion and how he felt after eating them.

Finally the cat was out of the bag. Pratap cannot squat because of obvious reasons. If he squats then he cannot eat! He preferred to eat....elsewhere where he does not have to squat!



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The

Bitumat's Official BIRA Daily Newsletter

BIRAmatters

Daily Musings During The Xth BIRA

Volume 2, Issue 1

Oct. 10, 2001 Daily Issue

Coming from the city of "New Flowers" are our delegates Mr. Wahab Bere And Mr Fathee Abu Baker. Well, I am sure you are as amazed as I am when I was told the meaning of Addis Ababa! Yes, indeed it is not just a flower but a new flower. So I suppose the name was given a long time back when the city must have been developed. And what embarrassed me most was that I was under the impression that Addis Ababa is a very hot place! I am educated that it is a very moderate temperature city and the weather is really very pleasant and enjoyable. Well, thanks to Wahab and Fathee, now I claim a better knowledge of Ethiopia!

Talking of the weather, the climate here too was fairly pleasant as we went for a site visit. All the delegates were donned in brilliant Bitumat colours with the logo standing out on the caps. We had a wonderful visit to the site as all the delegates really "freaked" out as this was where the water was separated from the milk! So to say! The site is being supervised by our own Al Saffar and at the very outset itself we must express our gratitude to the management of Saffar. Thank you very much! And what more, the application was good and the crew on the site were extremely cooperative.

The site was a real treat as we could see work in progress on one roof, then we saw the application going on in one of the bathrooms(which was as big as a sitting room in India, said Sajeed Munshi!) and water test had just been completed.

on one large roof. The delegates were exposed to what Light weight foam concrete is and how it looks when finished and what role it plays in providing slope to the roof. Mr. Naeem, the site foreman of Al Saffar showed how torching is done in a loose laid system. The delegates could see how the crew rolls out the rolls in the morning, prior to installing, and then how they mark out the overlaps before starting the actual application. They also saw how a pipe is dressed so that a proper grip is attained with

a roof activates the salivary glands of a roofer... either he freezes at the number of protrusions or he just falls in love with the roof because it is free of protrusions and upstands! " I have really learnt what waterproofing is all about", said Alias bin Mat from Malaysia. He further added that this is perhaps the best way of learning...going out and seeing for yourself. Many questions were asked during the visit and one important one was when to decide which system is most appropriate. Mr Ali was wanting to know why the



Abdallah Rizvi, Jaleel Agha with Mr. Akbhar, the Sanath Jaysuriya look alike.

the pipe. And yes, many of us were really scared to climb up the ladder but the fear had vanished by the time we came down! The bathroom was a new experience for many and the delegates could see how the system is terminated in such a situation. The finished roof was an exciting experience for the budding roofers and the Bitumat distributors. I will call it exciting because the very sight of a roof

owner had opted for a two-layer system over here. Well, I hope Ali was satisfied with the logic and reason provided why the consultant in this case has specified a two-layered system. Abderrehman from technopure Morocco compared the system to the one that is generally done in Morocco and why the first layer was terminated almost at level of the end of the cant strip. Sajeed Munshi was curious to see that here

...Continuation

the horizontal of the parapet was left untreated because it appears it appears that in India he has done a full treatment of the horizontal of the parapet also. Well, I suppose there are many considerations which determine whether the treatment extends over the parapet. Then again, the weather considerations are also there. Just goes on to prove that you cannot have a single system which is suitable for all!

The visit to Aramco exhibit is always keeping the delegates wonderstruck! Same scenario was witnessed once again. All the delegates were completely in awe and aghast as to how well the exhibit has been done up!

laughter which was very gih on the decibels! I knew that Emad's session had begun! Emad has an uncanny way of creating an instant rapport with his audience. The session on estimation can be really very boring and dull and insipid. But not when our Emad is in charge! He rarely allows one to indulge in quick bouts of siesta!

This was a very special session as this enables one to get ahold on the money part of things! Good estimation is the surest way of survival and then growing!

Last session of the day was with me and since we were really tired, I decided not to stretch the day and concluded with a brief introduction to selling to Architects,

the relation between "jerrgised" and "energised". Is there a remarkable similarity?

Lastly let me extend a hearty thanks to all the delegates who shared four wonderful days with us. Let me document the names of all the participants:

1. MR. AHMED ALI NUR
2. ENGR. AWAD GANNAS
3. ENGR. GHASSAN HAKEMI
4. ENGR. LEONARDO CRUZ
5. MR. MOHAMMED SHETTY
6. MR. FAHAD H. AL-NAJRANI
7. MR. HISHAM MOHAMMED AHMED
8. MR. MAGDY M. AL KADY
9. MR. MOHSEN M. AYOUB
10. ENGR. ZAFER AL SHERI
11. ENGR. ANWAR AL HASSAN
12. ENGR. KAMIL HARB
13. MR. MOHAMMED BUHARY AKBAR
14. MR. ABDERRAHMAN AL TAMA
15. MR. SAJEED MUNSHI
16. MR. SAMIH AL HADAD
17. MR. ALIAS BIN MAT
18. MR. KHAIRUDDIN BIN A. RAZAK
19. MR. WAHAB BERE AHMED
20. MR. FETHI ABUBEKER
21. HAFEEZULLAH GHULAM MOHD
22. ZAKI MOUSA M. SHANTI
23. MR. YOUS MOHAMMED
24. MR. CHABCHOUB HAFEDH
25. MR. FAHKFAHK MONDHER
26. MR. SMART IGWEBUIKE OKEKE
27. KHALID HEDDAD



Emad Abdul Azeem making his presentation.

I had actually left the group after the initial visit to Aramco exhibit, so I was not aware of their arrival back to the office. But just as I was stepping out of my office, I heard a rumbling of heavy

leaving the nitty gritty for the next day.

Finally before we sign off for the Xth BIRA session, let me conclude what happened on the Jarjir front. It actually "jerrgised" the consumers, now just correlate

"It has set the industry ablaze! it's Peer Less!"



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BITUMATTERS

ISSUES



Editorial

Value of training is immense. Since the days of the Hawthorne studies in 1930, an enterprise has recognised the value, importance and contribution of an employee. Today as the market is becoming keener, sharper and highly competitive, the value of effective training is no longer a secret! With TQM, BPR (not to mention the concept of a Learning Organisation!) becoming the buzzwords in the corporate sector, greater emphasis is being given on developing the human resource to an optimum level. Every successful enterprise maximises the productivity per employee. This is more so in industries where dependence on manpower is substantial. Here the example of the waterproofing industry comes to the fore, be it a manufacturer or the applicator, though more so in the latter. The reason why the applicators' role assumes a major significance is because it is the quality of the application which has to match the quality of the product. Incompetent applicator can mar the future of the application and the building on which it is applied. (in the bargain the poor owner goes berserk at the sight of large, streaky, dirty watermarks down his beautiful drawing room walls!)

Unfortunately, it takes all sorts to make the world! It is true in our industry too. The waterproofing industry today is plagued by amateurs and so called 'professionals'! Every construction comes with a unique set of challenges. Doing business all over the world involves adapting to the different ways! It is people who keep abreast with the latest with a keen eye for local construction details, materials, applications, climatic conditions and so on, that can really satiate the market requirement in the best possible manner.

Projects can be marred, profits can be drained, morale can be destroyed, and companies can go bankrupt! A grim scenario indeed! But true nevertheless! An incompetent team can wreak havoc!

It is never too late to learn! The right learning for the right job at the right time! Bitumat has a simple motto" Do it **RIGHT** ...and you shall reach greater **HEIGHTS!** Bitumat, the natural leader, assumed the mantle in training also. **BIRA** was born.



Bitumat Staff with the delegates who attended the first BIRA of 2001.

Our Commitment

Every business enterprise lives in an environment. It becomes the responsibility of each member to enhance that environment for better productivity, greater efficiency and more committed personnel. Each enterprise attempts to mould, shape the scenario so as to maximise in all respects.

Bitumat recognised the need for enhancing the quality of manpower in the industry. It dedicated itself for the accomplishment of the above. From the arid and ruthless deserts of Arabia emerged the BIRA...the Roofing Academy dedicated to taking one higher in the Maslow's hierarchy of needs! From Saudi Arabia what flowed was not only oil, but graduating out were roofing professionals coming from all over the world! Marching out from the BIRA auditorium were executives who's confident and definite gait indicated hours of intensive training and practical application! Whether it was the roofer from Latin America, Brunei or India or Australia, Ukraine or Gulf or Africa, it was the same new found confidence writ large on the

beaming faces!

Very systematically collected data is presented at the BIRA. Bitumat technical personnel have worked on facts and figures collected over the years. Bitumat R&D department has "burnt the midnight oil" to prepare reports based on empirical data only. Anything superfluous or not supported by actual data is weeded out immediately. Till date about 200 Civil Engineers, Architects, Foremen, Sales Executives, Roofers have donned the BIRA colours and have spread far and wide in over 40 countries. Bitumat hones out the best in the delegate so that when he goes back on the roof top he knows exactly why the membrane or the liquid is behaving in the way it is!

A professionally selected, applied and maintained application has a better chance of success!

Better oriented personnel means that the industry as a whole stands to gain...knowledge improves the future. (SAR)

Bintami leads in Riyadh!

Ramadan Iskandarani

Bitumat enjoys a wonderful relationship with M/s Bintami, which started as a small roofer 15 years ago, is one of the leading Roof and concrete repair specialist in the kingdom today. Over the years a very strong and resilient relationship has been forged. Bitumat believes that this is largely due to the vision of Sheikh Saleh Al Tami and Abdullah H Al Tami, the President and GM respectively. Together they have provided excellent leadership, direction and consistency to the company. Mr. Abdullah Al Tami, a dynamic young graduate, has been leading the waterproofing division. He has been successful in converting many modern management theories into practices, the Award of the Year, being one of them. Bintami has appreciated that quality is of paramount importance and this is where our relationship has cemented even further. Bitumat produces and offers quality, Bintami appreciates quality. Bintami is a regular user of Bitumat products and the latest project where they are using Bitumat products, is the Shopping Mall, Qasar Main palace and annexes including the Jumaa Mosque in Al Aqeeq. "The project will be handled by the Central Province office of the company" says the Regional Manager, Sheikh Khalid Tanweer. The scope of work involves application in the basement, roofs, tanks, swimming pool etc. The total area is expected to be around 35,000 M2.



Engr. Sheikh Khalid Tanweer receiving his 'Plaque of Appreciation' being the most outstanding Regional Manager of the year 2000. "The award was presented by Sheikh Saleh Al Tami, President of Bin Tami Co. during the company's Annual Meeting in Riyadh which was also attended by Engr. Abdullah H. Al Tami, General Manager (extreme left).

The Success Story

ATCO SHINES!

(By: Pratap Singh Rautela)

The continuous efforts and dedication has made, ATCO W/P a leading water-proofing co. in the Eastern Province. ATCO W/P was Bitumat's major buyer (in the Eastern Region) in year 2000. The credit goes to Mr. Emil

Abbasi, GM (Const.) and Mr. T.K. Mathew for their belief in quality products and calculated approach in winning the major projects in the Eastern Province. Al Hokair Andlusia Tourist Resort, AL Jeraisy Center, S.B.B. Dammam, Holiday Inn-Khobar, National School-Khobar, Chada Compound - Raka were some of their main projects in year 2000.



Mr. T.K. Mathew Incharge of Water-Proofing Division

SEMINARS



As part of our Global Education Campaign, Bitumat executives have been travelling all over the world presenting technical seminars, answering queries, providing solutions. The picture shows Bitumat GM, Mr. Riad Nimri, giving a presentation in Costa Rica on the second leg of his seminar itinerary. In his first leg, Mr. Nimri gave a seminar in Abu Dhabi, Dubai and the Philippines.



Seated above are delegates who attended the seminar on the 19th and 20th of April, 2001 at the Hotel Barcelo, San Jose Palacio, Costa Rica. They represented the Central American, Caribbean Islands and South American countries.

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WFTA O

BITUMAT Wins in 2000!

Nasdaq may fall...but rich dividends from Branz Appraisal

By: S.J. Agha

*A process that began nearly two years ago has finally yielded rich dividends! Dedicated efforts by our associate WPS in New Zealand led to this glorious chapter being written. It was certainly no cakewalk. On the contrary, the Branz team engaged us in a rigorous process of reviewing all our technical documentation and site inspection, both in New Zealand and in Sydney-Australia. This was not all. Branz did some very specific testing at their laboratory in New Zealand. After going through one of the most stringent and prolonged testing, BITUMAT finally won the coveted Branz Appraisal! This is yet another feather added to an already adorned Bitumat cap. Just goes on to prove: **QUALITY ALWAYS PAYS!***

New Product

BITUTAPE

Anti-Corrosion Pipewrap

BITUTAPE Anti-Corrosion pipewrap is a range of self adhesive, cold applied waterproofing anti-corrosion tape. **BITUTAPE** provides a tough and flexible protection to pipes against corrosion for both covered and exposed application.

BITUTAPE pipewrap heavy duty bituminous rubber compound provides self sealed joints at longitudinal and end of roll overlaps and is highly resistant to cathodic disbondment.

USES

BITUTAPE pipewrap is designed for use on buried and submarine steel pipeline, field welds, fabrications, bends and fittings.



Product demonstration in Bahrain.

DID YOU KNOW THAT

- **Bitumat** is the first integrated manufacturer of waterproofing products in the entire Middle East to have been accredited the ISO certification for it's waterproofing facilities?
- **Bitumat** has about 100 products in its range?
- **Bitumen** is the oldest recorded waterproofing material, the first case being reported by the Babylonians as far back as 3000BC i.e. about 5000 years back?
- **The Indian Emperor Shahjehan** is reported to have ordered the pouring of molten silver to stop a leak in the wonder of the world, The Taj Mahal?

One more new product from Bitumat

BITUPATCH for Roads repair & Maintenance

Porkmarked roads have been a source of nightmares for the municipal authorities around the world! After exposure to the elements of nature and heavy traffic, the roads begin to show

signs of wear and tear. Actually the roads are in need of urgent and appropriate attention but due to many factors, especially the non availability of expert technical personnel, the condition of the roads worsens at an alarming rate. There are abrupt patches on the roads (potholes!) and if left unattended, would ultimately look like craters! A stitch in time saves nine! In case of the road, a Bitupatch on time saves nine! The road gets a new lease of life! Bitupatch covers the cracks (for details refer to the data sheet) and offers a smooth road (and a drive!) to the drivers!

SUITABILITY OF APP MODIFIED MEMBRANE OVER THE PVC SHEETS

(By: Pratap Singh Rautela)

Modified Bitumen Membrane enjoys a wider acceptance & usage among architects, consultants & roofing contractors by a ratio of five to one over PVC, according to the latest published data by the NRCA. This is an indication of the excellent performance of modified bitumen membranes which are easier to maintain and can take a bitumen surface coating which literally can double the life expectancy. PVC, on the other hand, has shown no acceptance to maintenance coating.

Modified bitumen membrane at 4mm thickness is more puncture resistant than the 1.5mm PVC membrane. This characteristic is extremely critical when considering the potential for puncture against backfill material used in basement foundation or loose laid gravel over roof deck.

Field experience has demonstrated that

modified bitumen membrane is less prone to age hardening than PVC, which due to plasticizer migration tends to become hard with age. Further, the field experience has also demonstrated that modified bitumen membrane is less prone to shrinkage as compared to PVC, which due to plasticizer exudation, tends to shrink, causing cracking. Modified bitumen membrane due to its weight and dimensions, lies more snugly to the prepared deck, than PVC sheets, which tend to wrinkle during application, causing the air in the wrinkles to expand when hot. This causes a ballooning effect, which displaces the ballast gravel and exposes the membrane to the elements of nature. PVC membrane have a thickness of 1.5mm to 2mm only and this gives very little weight per M² to PVC membrane as compared to modified membrane. This makes modified membrane more resistant to wind uplift.

Additionally, modified bitumen membrane is more economical than PVC.

BITUPATCH is a prefabricated high quality rubber modified bituminous tape which is reinforced with a high tensile strength polyester core.

BITUPATCH is specially designed which creates SAMI (Stress Absorbing Membrane Inter-Layer). The bitumen rubber will significantly retard reflective cracking unlike the hot or cold mix repairs particularly when applications have been old roads where movement is inherent in the base as a whole.

BITUPATCH is ideally suited for variety of climatic and road traffic conditions.

Bitupatch is exceptionally easy to apply, requiring very few tools! And yes, the rapid sealing quality means that the traffic can resume soon after the application has finished. No wonder some one referred to it as a Wonder Patch! (Please contact Bitumat Sale Departments for more details.)

Feature

MODIFIED BITUMEN: A Growing Choice

Bitumen has been reported to be the oldest waterproofing material used, perhaps as way back as 3000BC!

It should be recognized that bitumens are complex mixtures of hydrocarbon molecules, ranging from low molecular weight oils (maltene fraction) to heavy, polymeric-type molecules (asphaltenes). Bitumen-polymer blending has undergone years of research and practical development. The end product today is very resilient, supple and rugged.

Although modified bitumen membranes are a relatively new entry in the world of waterproofing, they have created a vantage slot for themselves. Modified bitumen originated in Europe during the 1960's and was exported to the U.S. in the 70's. By the mid nineties modified bitumen membranes had captured a very very significant share in the U.S. also. It is reported that their share exceeded 6 million M2 in 1996 and 1997 saw a growth rate of over 11% over 1996. Their market share is growing very steadily as the membrane acquits itself against the ruthless onslaught of nature. The growing satisfaction by modified membrane users has given the impetus for a larger share. According to the 1986 CIB/RILEM International Survey, modified bitumen usage in Italy was as high as 89 percent of all commercial roofing. A similar growth is witnessed all over the world even today.

The new modified bitumen systems have fallen under the "Single Ply" category. This is somewhat of a misnomer since almost every modified bitumen system is two ply. Actually, the modified systems are more like a built-up roof in that they are easily maintained and repaired, when necessary.

The reasons for a rapid growth of modified bitumen membranes are many:

Modified bitumen membranes have greater versatility in substrate configuration, going from steep roof configuration to low slope roofs.

Handling characteristics are improved at both low and high temperatures by the addition of a synthetic polymer to the asphalt, making the modified asphalt tougher and more elastic. In addition, the type of reinforcement used also has a great effect upon the product's overall handle-ability and dimensional stability. The

reinforcement provides the strength and additional capabilities.

Modified bitumen also has extreme versatility during installation, specifically roofs that contain many penetrations over localized areas. Examples of this are industrial roofs, small apartment roofs, etc.

To properly secure a watertight seal around every projection can be difficult with BUR membranes, and expensive with thermoplastic and elastomeric systems. The time and expense of closing and sealing each small penetration may require a pitch pocket for BUR, clad metal flashing for thermoplastic sheeting and the use of pre-formed accessories for elastomeric roof systems. Modified bitumens, in contrast, can easily be torched to the penetrations.

Modified bitumens are normally more accommodating to penetration and flashing details than other systems. Modified bitumen membranes can be installed on roofs with high slopes and complicated geometry. When the cost of the modified bitumen material is compared (in-place cost) with thermoplastic or elastomeric systems, they are extremely competitive.

Modified bitumen membranes offer a wide variety of application methods. They can be spot bonded, loose laid, fully adhered, nailed or torched or mopped. They can be exposed or ballasted.

"On many a site, there is a problem of electricity supply and we have to carry our own generator when installing any of the thermoplastics like PVC. With Modified membranes there is no such problem as we just carry our LPG cylinders", said a roofer in Saudi Arabia. "It is really very convenient when any repair job has to be done. We do not have to carry a generator or a host of other accessories. All what we need for modified bitumen membranes repair, is just a few tools, a roll and a cylinder! As a roofer we are much more relaxed when repairing a modified membrane", he added.

Modified bitumen is popular in both new construction and reroofing markets. In the US it holds around 18-20% market share in each segment.(SAR)

Have you ever heard of **RAFCRAP?** Obviously not! I have just made this up! But this acronym conceals more than what it reveals! This put together can give us a clue of what is the best mental state of man in which he is most receptive and absorbs the most! Real Spongy!

- Relaxed
- Attentive
- Focused
- Creative
- Responsive
- Alert
- Positive



If you are not relaxed, attentive and focussed, then you are CRAP! And that's not good! You need a therapy! This is the time when you must ensure that the mind is calm and the body is pain free, relaxed, easy. Try some humour. How about this. Once a child came into a room and shouted, "Pedro, your daughter has committed suicide!" Pedro was devastated. He rushed up the 20 storied building and threw himself. But when he flew by the 15th floor, he realised that he had no daughter! When he reached the 10th floor, he realised that he was not even married! By the time he flew passed the 5th floor he realised, he was not Pedro! But by now it was too late!

Factor Fiction?

- An ostrich's eye is bigger than it's brain (no wonder the silly fool pushes his head in sand!)
- Banging your head against a wall uses 150 calories an hour (crazy guy! Banging away for an hour and the wall still holds!)
- Butterflies taste with their feet (perhaps they would walk on their tongue, that is, if they could walk!)
- Every time you lick a stamp, you're consuming 1/10 of a calorie (So? Just stop licking!)
- If you yelled for 8 years, 7 months and 6 days, you would have produced enough sound energy to heat one cup of coffee (Just a wee bit long to wait for heating my cup of coffee?! never liked coffee, anyway!)



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If you have any comments/inquiries about this quarter's issue, please address your correspondence to the attention of The Chief Editor.

The GM's VOICE

We understand that being the first and best requires investments and not just words. Recently, Bitumat invested large sums of money to improve the corporate service to our clients and markets on many fronts: deliveries, communications, technical support, marketing services and above all, the quality of our products.

We invested nearly half a million U.S. dollars in procuring the best computer software for total automation and integration of our corporate systems. BAAN, the most trusted software in the world for a manufacturing unit. BAAN is indeed a very powerful system that integrates all the functional departments in the company starting from manufacturing to quality control, sale, distribution, purchasing, finance...etc. The system has given us a more accurate and elaborate control over our operations and system. The BAAN, combined with fiber optics networking have improved our efficiency and in generating and communicating informations and data as and when required which improves the quality & speed of decision making.

Bitumat has built a new corporate office building, getting closer to our manufacturing units which allows for more rapid communication among the services departments & manufacturing. The building was designed to improve the productivity of various departments the efficiency and comfort of our staff. As we have outgrown our old corporate office building. Our training center is the building's focal point, the popularity of BIRA and other training programs created the need for a function oriented space and design.

The demands for the Bitumat membranes have exceeded our manufacturing capacity and created occasional shortages and at times allocation. A testament to our clients wisdom in recognizing consistency and performance. Last month we completed and commissioned the expansion of our membrane manufacturing capacity by 25%. Yes we are ready for the peak season and I look forward to another expansion next year. . .help me out!

The fact that Bitumat was the first to use BAAN in the Gulf, the first waterproofing manufacturer in the Middle East to get the ISO certification, the first to create an exclusive Roofing Academy (BIRA), the first to create an in-house fully equipped Laboratory for active R&D, the first to stage sports championships, the first to invite an international sportsman (Zaheer Abbas, the Asian Bradman) just goes on to prove just one point.... **Bitumat is committed to serve you better!** We are always a step ahead of the others! And "we" means, Bitumat and YOU! Together we LEAD! Bitumat offers **CONFIDENCE!** Bitumat has never settled for the second best, and you, our esteemed associates are the best living example.

RIAD NIMRI
General Manager

CHOOSING A ROOFING SYSTEM: Inverted or Conventional ?

By: Pratap S. Rautela & S.Abdallah Rizvi

Over the years there has been a gradual change in the way a roof is being built. The order of the roofing components have undergone a change. Now a fairly large proportion of the roofing follows the inverted assembly. With changing times and a more research oriented roofing attitude, there has been a substantial debate over which system is more appropriate. In our discussion we shall concentrate on roofing over concrete deck, though a myriad of decks are in use the world over.

More and more roofing consultants and specialists are forwarding their views. Even the manufacturers of waterproofing membranes are getting more involved in recommending a specific roofing system as the life of the waterproofing system may get affected depending upon the system used. Again, the place of installation is very important. A specific roofing system may be suitable in Europe but may not be so in



the Middle East or Asia. It appears that the inverted roof has gained more acceptability in the Middle East.

Just as a coin has two sides, every proposition can be viewed with both pros and cons.

At this stage it becomes imperative that we understand the objectives of some of the major components of the roof assembly: the waterproofing membrane, the thermal insulation, the vapour barrier and the ballast. The waterproofing membrane is used so that the roof becomes watertight and impervious to any ingress to water and the thermal insulation is used to minimise the flow of heat or let us say, to provide thermal resistance, thereby keeping the inside temperature at the optimum. The vapour barrier is used to prevent the amount of water vapour that can travel from a part of a building to another one and a ballast to ensure that the roof system remains intact and functional.

Having established the reasons for using a particular component, let us see how each is actually fulfilling the purpose for which it was intended. For this we will have to view the system as a whole. The placement of the material perhaps becomes vital to ensure the maximum

performance by each. So, if the waterproofing is placed over the thermal insulation, then certainly it will also be protecting the integrity of the thermal insulation. However, in this case, the thermal insulation will not be protecting the waterproofing membrane! And now comes the question: Is this what we have planned for? Yes, if the waterproofing fails, then the whole scenario changes! And the whole building is now in a mess(not to mention the furniture and the other expensive décor!) But if the thermal insulation fails, you do not have the same crisis looming!

In an inverted roofing, there is no need for a vapour barrier, but which may be a necessity in a conventional roof, depending upon the dew point and the average of the low temperatures.

To the proponents of the inverted roofing system, it seems more logical and scientific as it ensures that each component performs as per the expectations of each.

There is synergy effect generation as each component supplements the performance of the other and as a whole, the entire roof performs better and the life of the system is actually enhanced substantially.

National Research Council of Canada (NRCC) states that protected membrane roofing (Inverted Roofing System) can overcome some of the disadvantages of conventional system. Today, although both systems are being used, the proportion of inverted roofing system is substantially large. This is specially true in the harsh middle eastern climatic conditions. In the United States and parts of Europe, the conventional system is still popular.

It is the waterproofing membrane which is to protect the integrity of water proofing system. In conventional system the waterproofing membrane is subjected to constant thermal cycles, which leads to rapid deterioration of the membrane and thus leads to the failure of roofing system as whole, argue the advocates of inverted roof system.

In inverted roofing system the waterproofing membrane is protected against elements of nature as well as any possible physical and mechanical damage during construction and operational use because the membrane is bonded positively to the substrate. The membrane is protected against the elements of the nature that accelerate the aging. Here insulation provides protection against seasonal temperature variations and extremes between daytime and night-time by maintaining the membrane at a

(Continued on Page 4)

SITE SAFETY: PREVENTION IS BETTER THAN CURE!

Safety on sites has always been a very vital issue. Not only because it involves efficient functioning but also human lives which are of paramount importance. With greater concern for safety, people are getting more and more conscious and serious efforts are being made for improving safety on sites. Many an ignorant roofer has run into great financial and emotional trouble because he has somehow placed safety on the back burner. It pays to be wise and one of the signs of wisdom is to be aware of how one can make the site a safer place to work. It has also been noticed that roofers who are genuinely concerned about the site safety have crew who are more committed and dedicated and perform more efficiently! It shows in the attitude of the organisation and it's employees!

Some of the possible areas that need looking into may be the following:

- * The Deck, it's height, the parapets
- * The Weather Conditions, the wind
- * Scaffolding
- * Hazardous and flammable materials
- * Ladders

MAKING A JOB SITE SAFE

- *Check to be sure that you have a first aid kit and fully charged fire extinguishers. Know their locations.
- *Maintain proper clearance from all power lines.
- *Find out where the nearest hospital or ambulance service is located. Post the telephone numbers where you will be able to find them in a hurry.
- *Be sure that a new deck is properly secured.
- *Before tearing off, check the underside of the deck for dangerous areas.
- *Frost, snow, and rain can make a deck very slippery. Proceed with caution!
- *Holes (anything larger than a 2-inch (51-mm gap) must be covered and marked, guardrails must be erected around it, or workers must wear personal fall arrest equipment.
- *Do not remove a cover without the OK of your foreman. Immediately re-cover the hole when the roofing or flashing works is complete.

For Modified Bitumen:

- *Long pants with no cuffs that cover the top of the boot.
- *Cotton or leather gloves with a snug-fitting cuff.
- *A long-sleeved shirt buttoned at the cuff and within one button of the collar.
- *Goggles or safety glasses. A bucket of cold water in case of burns.
- *Boots with thick rubber or composite soles.
- Hose and cylinder regulator to be checked for any possible leakage and weak areas.

In addition, remember the following:

- *Wear a hard hat whenever there is a hazard possibility from above.
- *Do not wear earphones, rings on fingers or any other type of jewelry.

MORE IN THE NEXT ISSUE

(Courtesy: NRCA Pocket guide to Safety)

SEMINARS

By: Emad Abdul Azeem

This month, Bitumat Jeddah Branch along with BMC Waterproofing Co. Ltd., one of the largest certified applicator of Bitumat products in the kingdom, conducted a seminar at Crown Plaza Jeddah.

Around 24 delegates from BMC attended the seminar. Engineers, foremen and the salesmen had a chance to exchange ideas and talk about how they can make the waterproofing business better and equally rewarding in terms of profit. A



Exchanging ideas with the BMC participants.

lot of questions were raised and were answered appropriately. It was indeed an interactive seminar where the audience was enthusiastically involved making it a two way communication.

LAUGHTER... THE BEST MEDICINE



Laughing at work will not only make your days more enjoyable, it also can make you more productive. Here is the proof:

- 1.) Ninety-six percent of executive surveyed believe people who have fun do their jobs better than those who have no sense of humor:
- 2.) Twenty middle managers increased productivity 15% and cut sick days in half during the 9 months following a "fun at work" workshop.
- 3.) Employees at the Colorado Health Sciences Center showed a 25% decrease in downtime and a 60% increase in a job satisfaction after they viewed humorous training films and attended fun workshops.

Our interactive seminars series have continued worldwide. After completing the Latin American tour, Mr. Riad Nimri was over to the African continent and made a series of presentations in Ethiopia & Nigeria.

A presentation was made in the Sheraton Hotel in Addis Ababa. Mr. Abu Bakr Kamil of Assem Private Ltd., Bitumat Distributor organised the seminar. In Lagos, Nigeria, the seminar was organised by Bitumat Distributor Garnet Industries and Mr. Munshi Abdul Jabbar played a very vital role. The attendance in both the seminars was excellent, with

more than 100 delegates attending. In Nigeria also over a hundred additional Architects attended the proceedings. Intense interaction between the speaker and the audience was witnessed. Mr. Nimri spoke at length on the changing roofing concepts and practices across the world. He highlighted the strengths and weaknesses of various roofing materials and how one has to be very alert and judicious in material selection.



Mr. Nimri with the delegates in Addis Ababa, Ethiopia.



Munshi Abdul Jabbar and his wife, Riad Nimri & delegates in Lagos, Nigeria

Do people prefer male or female bosses?

According to a recent poll by The Gallup Organization, Princeton, N.J., most U.S. employees prefer male bosses. In 2000, 48% of workers said they prefer to work for males, 22% said they prefer female bosses, & 28% said either would be fine.

By: Syed Abdallah Rizvi



B-chat is a tete - e - tete with a leading personality who has exhibited tenacity of purpose, dedication, commitment and a zeal to go for the pinnacle.

Mr. Faisal Saif A. Al Ansari is the founder and G.M. of Faisal Al Ansari Bldg. Materials Bitumat Distributor in Jubail, Eastern Province, Saudi Arabia. His company is one of the most aggressive and prominent players in the building materials industry. A man with a great sense of humour, wit and spontaniety, Faisal spoke to the chief editor about his opinion on various issues.

Abdallah: What prompted you to get into this profession?

Faisal: We, the Al-Ansari, started business from the Construction activities and there we were facing the water penetrating problem since quite long. To overcome this problem we were searching good product on whom we can rely. After a thorough market search we were able to find Bitumat and this solved our water penetration problem. This prompted us to be a part of Bitumat.

Abdallah: Since when are you into this?

Faisal: 1994.

Abdallah: Where are you from?

Faisal: Jubail, Saudi Arabia.

Abdallah: Does Waterproofing fascinate you in any way?

Faisal: Yes, its' long lasting power in this climate had facinated us. It can really do so much! It is also very challenging as every job comes with a unique set of problems.

Abdallah: If you were not into this profession, where do you see yourself?

Faisal: As earlier mentioned we were in construction business and still we are with it and probably would have associated with it only.

Abdallah: As a young man what were your hobbies and interests? Still the same?

Faisal: I was a keen on Football, reading books and Interior designing. Except for football, everything else remains the same. Well age.....!

Abdallah: How do you spend your time when not involved in work?

Faisal: Giving as much time to family and then friends. I have always believed in being a family man...it helps.

Abdallah: What is your ambition in your life?

Faisal: To be a pioneer in the business of construction requirements.

Abdallah: Have you achieved your ambition?

Faisal: Not completely but to a large extent YES.

Abdallah: What advice you give to the roofers?

Faisal: To follow the Manufacturer's specifications at all times and avoid shortcuts. Shortcuts lead to large leakages!

Abdallah: What are the moments of your life that you still cherish and get nostalgia about?

Faisal: Lot of achievements which I

Feature



THE SQUARE WHEELS

The other day I was fiddling with the Internet (some people call this activity "browsing" why?) when I stumbled on to a rather strange or rather a bizarre thought. Some one had the audacity of saying "Square Wheels"! Nuts! I chuckled to myself. Wheels which are square? Preposterous! Unimaginable! Next someone may say "Wheels that are triangles"! or hexagonal for that matter. Anyway, after my initial reluctance and disdain, I went a bit deeper into the "Square Wheels". I was in for a surprise.

- The concept of square wheels is based on the premise that most systems and processes do NOT operate smoothly or most effectively.
- There are always better ways to accomplish things.
- Communications between leadership and support people CAN be improved.
- Motivation is important for progress and improvement.

"And the round wheels of today will become square wheels of tomorrow!" Indeed it is not the shape of the wheel which is important. It was the underlying philosophy that was really significant. Yes indeed, it is true that optimisation of systems and process is what really takes the organisation to where it is today or where it will be tomorrow. The route being currently used for reaching our goals may not be the best. There may be better ways of which we are oblivious. In todays world the role of effective communication is gaining currency day by day. The whole unit performs as a team when communication is at its best. Yes, there is then the unity of objectives and unity of efforts to achieve the predefined,

cherish very much and yes, I do get nostalgic about my childhood! Wonderful days! Those days Jubail was a small town of a few thousand people, very few cars and life was easy and relaxed.

Abdallah: Any regrets?

Faisal: Al-Hamdolillah, nothing!

Abdallah: What changes have you seen here in the field of waterproofing, in terms of material used and the way of application?

Faisal: Day by day new products are coming in the market in application, more convenient methods are being invented thus avoiding long man hours and reducing expenses. I have seen the days when very traditional material and methods were used, that is, if at all!

Abdallah: What are your comments on the role that, Bitumat has played and what further role do you envisage for Bitumat?

Faisal: In general Bitumat has played a good part in reducing the leakage problem and providing world class material. In my opinion, Bitumat should also educate the common man so that he can also waterproof his building scientifically.

Abdallah: There is a tremendous growth in usage of modified membranes as a waterproofing material around the world. What are your comments on this?

Faisal: Bitumen is the oldest material used for waterproofing and it is suitable for almost every climate. I envisage a greater market share in future.

understood objectives. And certainly, the role of human resources is not to be underestimated. Chris Arygris, Maslow, Mclelland all have a role to play, not to speak of the theory X and Y of McGregor! Yes, in simple words, Square Wheels are simple yet very powerful tools for improving performance. The whole paradox is that we get so engrossed in running, pushing, pulling to achieve the set goals that we are really unaware of the possibilities of better achievements, better ambience, better dynamism. The whole idea is that we should detach ourselves from the current and go in for an intense, unbiased introspection of the situation as it exists. We shall find that our wagon is having wheels which are square (shall become round later?) and the round ones are loaded on the wagon! For better performance, check your "wheels"! (SAR)

(Inspiration due to Performance Management Company).

"MASTERSPEC"

To help roof system designers specify proper roof systems for re-roofing projects, the November 2000 update of *The American Institute of Architect's (ALA's) MASTERSPEC*, which includes a new roofing section, was published.

PERSONALITY TEST

How do you eat fried eggs?

Answer this question for fun & see if you agree or not.

1. The egg white first
2. The yolk first
3. Hit the yolk and mix it with the egg white before eating.



(Find the test result at the back page)

Al-Saffar, a success story in the Eastern Province.

By: Pratap Singh Rautela

Al-Saffar Establishment, waterproofing and thermal insulation specialists, are one of the top distributors and applicators of Bitumat products for the last 10 (Ten) years.

Al-Saffar has a high degree of technical know how and expertise to select the best material and system for any situation. This results in a technically sound proposal and a guaranteed job, installed by experienced Al-Saffar applicators under close supervision of their qualified Engineers.

They are one of the professional companies and their key to success is the high quality products from Bitumat coupled with high technical expertise and quality control. Al-Saffar is a well managed and a customer service oriented company with quality-it's pride.

Some major waterproofing projects executed by Al-Saffar Est. are Tahdeeb School in Sihat, KFUPM (30 Villas-double layer), ATCC Raka Housing Compound, HRH Prince Satam Commercial Center, Khobar and HRH Prince Mashari Palace in Goldenbelt, Al-Khobar.

CHOOSING A ROOFING...

(Continuation from page 1)

constant temperature without daily fluctuations.

Hence in an inverted roofing system, there is actually slowing down of the aging process thus enhancing the life expectancy of the membrane. Further in inverted roofing system there is reduced risk of trapping condensation in the insulation. The roof provides a stable and solid base for the installation of membrane.

So, in a nutshell we can conclude that the benefits of an inverted roof system are:

- 1.) Thermal Insulation protects the waterproofing membrane and extends the life of the system and thus achieves the objective of doing waterproofing.
- 2.) No need for a separate Vapour Barrier as the waterproofing membrane doubles in as a vapour barrier also and interstitial condensation is prevented to create a durable and a trouble free roofing system.
- 3.) Inverted roofs are able to accept upgrading of the thermal insulation at a later date without difficulty, provided there is sufficient height to parapets, rooflights etc.
- 4.) It is much more convenient to install the membrane over a firm deck than over thermal insulation, when it becomes really cumbersome and hazardous. To avoid this, rigid PU with glass fleece/asphalt facing or isocyanurate have to be used.
- 5.) Handling of sensitive and stress points is much better in an inverted roof than in a conventional roof. Dressing of protrusions is much more detailed as the torching can be done exactly as required and there being no fear of burning the insulation and thus leaving the dressing weak for subsequent leakage. This is perhaps one of the very important considerations which determine the integrity of the waterproofing.


However, there are some limitations of the Inverted system.

- 1.) NOT ALL thermal insulation can be used. In an inverted roof, the choice of insulation material is rather restricted and most advocate the usage of extruded polystyrene, and polystyrene is known to be vulnerable to many coatings.
- 2.) In an Inverted system, ballast is normally always recommended.
- 3.) Inverted system may not be used when there is substantial slope in the roof.
- 4.) Since the entire system is open to heat flow, by placing the insulation above, we are still not able to arrest the heat losses due to convection, but this may not be very high, perhaps even negligible.
- 5.) Generally more suitable over a concrete deck than over wood, steel etc.

In a conventional system one can use a wider variety of insulation and there being no need for ballasting. Hence a variety of exposed finishes can be utilised giving an aesthetic look to the otherwise

non-glamorous" roof! The dead load on the roof is lesser in a conventional system. In case of a leakage (or when there is moisture condensation) in the conventional system and moisture is trapped below the insulation, there is a strong possibility that the thermal insulation will see a lesser efficient K-value in due course. This is not desirable. However, if there is usage of a base sheet, then the above stated can be avoided. Here comes the role of good engineering practices versus actual practices. So, depending upon the roof structure, the slope, its capacity to bear load and the specific requirement of the owner/consultant, either an inverted system is opted for or the conventional one. But the choice should be based on precise calculations and objective analysis only.

"It has set the industry ablaze! it's Peer Less!"



POLYFLAME
APP Modified Bitumen Membranes

Stop Needless Chatter, save and be productive!

It often is difficult to have a conversation that doesn't take longer than it should. And if you have 20 conversations a day that last 2 minutes longer than they should, you will have lost 40 minutes of productive time. To have more efficient conversations, try doing the following:

- 1.) Stop the babblers. If you are detained by a talkative person, politely ask, "So what is the bottom line?" If you speak in a non-threatening way, the speaker will get the message and wrap up the conversation.
- 2.) Get them together. If employees are giving you conflicting information, gather them to talk about the differences. Meeting with them separately will waste your time.
- 3.) Schedule breaks. Try not to engage in impromptu conversations. Instead, delay conversation breaks until you have completely finished a task.



Have you tried SYNROOF HI-BUILD for your corrugated roof? CAN REALLY STRETCH!

DID YOU KNOW?

Tensile strength, Elongation, Strain energy and Initial modulus. These properties determine the ability of membrane to repeatedly withstand stresses imposed on them at joints and other places of concentrated movement as well as from shrinkage due to low temperature or membrane creep. The minimum strength requirement also applies to the weakest direction since some membranes exhibit an isotropic behaviour. Since strength and elongation properties vary inversely, i.e. high strength membranes have low elongation and vice versa, the strain energy provides a better measure of the combined properties. Where cyclic loads are involved, as in the case of the wind uplift pressure on mechanically fastened roofs, the modulus helps in the design of a fastening system for the load within elastic limits. Un reinforced membranes have very low initial modulus.

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Will it be CYPRUS, THAILAND,
BULGARIA, MALTA, ALGERIA Or???

Your Suggestions Are Solicited!

BREAKING NEWS

Canada has set new records in the roofing industry!

In the year 2000, the Modified Bitumen Membranes have actually left ALL the other waterproofing materials miles behind!

- 50.4% of the low slope new construction market and 52.9% of the low slope reroofing belonged to Modified Bitumen Membranes!
- Canadian Roofing contractors reported 85.5% of sales in 2000 involved low slope roofing work.

PERSONALITY TEST (From Page 3)

* Here are the results:

The first choice: You are logical, smart and inventive. Sometimes you are too cold and selfish. OOPS!

The second choice: You are soft-minded. You find it's too hard to say "No" to others, especially when you are pushed. Quite often, you are taken advantage of because of your soft-minded nature.

The third choice: You are always a special one but sometimes you disagree with other people's feelings and ideas (hmm is that true?). You normally go against social rules and regulations.



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Have an Interesting Browse!!

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TECHMATTERS

ISSUES



After a rather prolonged and an intensive study, Bitumat's R&D department has circulated the much awaited new product data sheet for the most rugged and versatile modified bitumen torchable membrane POLYFLAME. Yes, Polyflame is really tough and strong. As one roofer said, "It's a combination of a Rhino, a Hippo and a Tusker! Although the relevant ASTM standard specification was published in 98-99, it really came into effective existence in the year 2000. Then, Bitumat R&D virtually started staying (hibernating?) in the Laboratory for complying everything as per the new ASTM standard specification.

Even a cursory glance would have shown that there are substantial changes in the data sheets. For the benefit of all of us, let us briefly see how we read the new data sheet and how this needs to be understood. The first page shows the description of the product. You will notice substantial changes here itself. In the new data sheet we have showed Polyflame as a distinct product which is *not just another* modified bitumen membrane. This is the reason why the word *proprietary* has been frequently used. The meaning of proprietary is EXCLUSIVE...AND that's what Polyflame is supposed to be all about! The description is very elaborate and gives more details of the mix showing why it is a superior waterproofing compound. The word ISOTROPIC has been used because we want to highlight this feature in Polyflame.

The outstanding features list in very exhaustive and elaborate. This helps to tell the reader about the product *without searching for*

all these. At a glance, the qualities of Polyflame are evident. And this is what the specifier / user wants.

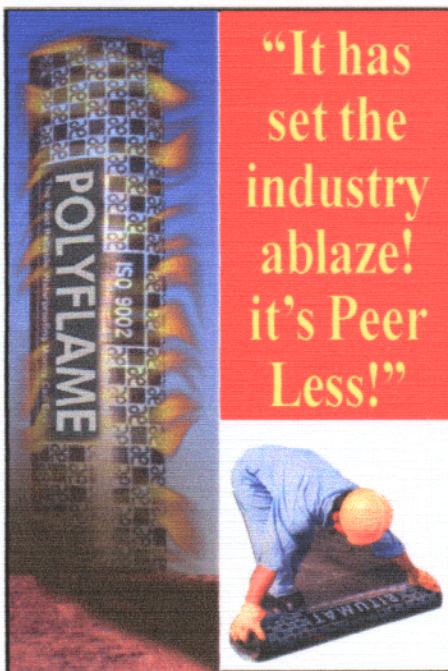
This is the first time that new ASTM standard specification has been referred ..D6222 Type II, along with the relevant CGSB and UEAtc which are still referred for certain tests and their values. Just to brief you, this ASTM deals with APP bituminous membranes using polyester reinforcements. Our data sheet states the median

to state the tensile strength, then as per ASTM D 6222 the minimum acceptable tensile strength at 23 deg C should be 14KN/M or 700 N/5cms. So, ASTM D 5147 is a standard test method and not a specification whilst the ASTM D 6222 is a Specification (which states certain performance requirements) and not a standard test method.

However, the UEAtc is a standard and a specification at the same time!. So, the values which were stated in our earlier catalogue were as per our own assessment and tests and not as per any specific ASTM standard specification. Hence there was room for tolerance in the values stated.

The second page shows technical data and in the current data sheet it is very elaborate and goes very deep into values depending upon temperature and so on, this is because we are now referring to ASTM D 6222 which specifically states values at certain temperatures. By following the latest ASTM (where applicable) we are the only local manufacturers to be current.

The tensile strength is now reported at 23 deg C and minus 18 deg C respectively and this shows substantial difference at 950



values, where ever applicable.

At this point let me clarify the difference between an ASTM Standard test method and a Standard Specification. The former advocates *HOW* to conduct a particular test i.e. gives details of the procedure, so if we wish to test for tensile strength we follow the method as given in ASTM D 5147. The latter gives specific values. So for example, we want

"Even blindfolded I can identify a Polyflame roll as soon as I start torching"

MOHAMMED AHMED
a roofer in
Saudi Arabia



Have you tried SYNROOF HI-BUILD for your corrugated roof ?

Can really stretch !



N and 1200 N respectively. Previously we were reporting only 1150 without any temp. reference, and were as per the UEAtc tolerance limits. These figures are to be understood in the right perspective. One must understand that at low temperature the material becomes hard having lesser elongation and hence requires extra load to break. Thus the tensile strength becomes higher at lower temperature. The other property to be noticed here is the difference between the Longitudinal and Transverse values. Here this is lesser than the previous values: only 150 N at 23 deg C as compared to 360 N earlier. This is where the isotropic characteristic is evident and indicates dimensional stability. This is an important characteristic of the membrane as this affects the performance of the membrane on the roof! And this affects the integrity of the waterproofing system! See, the role of Isotropic characteristic? This is one issue which many of the specifiers and consultants are genuinely concerned, and in our humble opinion, rightly so. If a membrane is Anisotropic, then what we are getting is that there is different forces in different directions! So one membrane may show very high Tensile strength in the Longitudinal direction and not so high in the Transverse, say 1100 N in L and 750 in the T. On the other hand, we have a product which shows 1000 N in L and 800N in Transverse. In your opinion, which is better for you? Which would you want to install on your OWN roof? Think and you will find our recommendation at the end....just check out if we think alike!

Some one may suggest that the new data sheet shows lesser tensile strength than before. Yes, this is due to the fact

that we are now referring to the most current test method and is the median value, whilst the earlier values were as per the UEAtc and CGSB and were under different test conditions. This, however, does not mean that the product has in any way become inferior to the one before! **THE PRODUCT IS THE SAME** it is just that rather than stating the higher values, now we



are quoting the median values. Bitumat has once again assumed the mantle of leadership and reviewed the data sheets as per the new ASTM which is now finally available. We are perhaps one of the few around the world who have quickly adopted the new ASTM specs. Just to add here that there are other ASTMs like the D 6223 (for double reinforced membranes) and others which we shall be referring to when other products are considered.

The elongation value is to be read similarly. And since the elongation and the tensile strength are both lower than before, the Load strain product will automatically fall.

The water absorption is the new data sheet is showing <1 whereas in the previous one we showed <.012. Again, this is due to the ASTM D 5147 whilst earlier we were referring to ASTM D 570 and

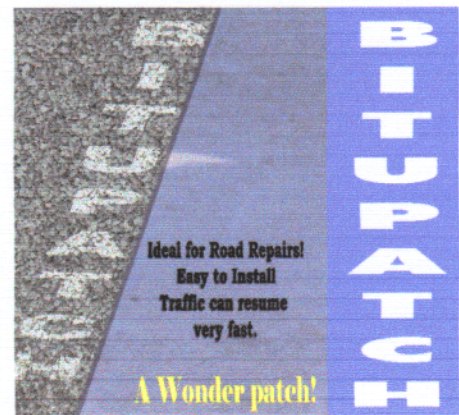
D471. Acceptable value as per ASTM D 6222 type II is 3.2 %. Thus we are very safe i.e. <1% against 3.2%. Again, the use of different test procedures yield different results on the same product.

The new datasheet adds the feature of dimensional stability and shows excellent values, +0.5 % for Longitudinal and -0.5% for Transverse, meaning that when the membrane shows equal movement in both directions, longitudinal as well as transverse, and thus there is no distortion. Just visualise a photograph and that it is stretched only, say, horizontally? what we see is a distortion of the image! & the photo changes totally. The same happens if the membrane is dimensionally unstable.

Please note that this data sheet gives more sub-classified data and which is more accurate than any other competitors who are still referring to old standards and values. The tolerance limits are as per the UEAtc directives, whenever applicable.

Coming to the answer to the query stated in 1st column, we feel that the one which shows closer values between the Longitudinal and the Transverse is more dimensionally stable! So, the second option is better.

And yes, one more thing. Perhaps one remark was made by one learned expert that the aspect of dimensional stability becomes very significant in seismic zones! In an earthquake situation a dimensionally stable membrane plays a major role!



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Have an Interesting Browse!?

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The Importance Of Inspection

Building owners should be aware of why roof system inspections are worthwhile.



EDITOR'S NOTE

BITUMAT has always raised the issue of preventive maintenance because we believe in "There is no need crying over spilt milk! Prevention is better than cure!". From various platforms we have highlighted the growing negligence by the concerned parties and how the concept of "a stitch in time saves nine" is really applicable on our rooftops!

Preventive maintenance is never a waste of time nor is it a job reserved for professionals only. Every building owner or user needs just the right inclination and a will... the rest is easy.

We came across this article in the September 2001 Issue of Professional Roofing. We feel that this supports Bitumat's view in totality. We are reproducing this article for those who are sensitive, caring, professional, and who want the best return on their investment. In other words, this is meant for YOU!

Roof system inspection can be the most effective method of ensuring roof system life and reducing leaks. And as a roofing professional, you should explain all the advantages of roof system inspections to building owners.

For example, many building owners, such as school districts, that have long-term expectations for their buildings, set up roof asset management programs to ensure maximum roof system lives. Regular roof system inspections are the keys to these programs' success. But owners with shorter time perspectives, such as retailers and developers, may incorrectly assume that because they plan to occupy their buildings for limited times, they do not need to perform roof system inspections. Such owners may not understand what inspections are designed to do-help prevent leaks.

The following information can help building owners understand the value of roof system inspections, as well as reaffirm what should be done during such inspections. Building owners should

understand that if a consultant conducts a roof system inspection, a contractor will need to be retained to perform repairs. However, if a contractor conducts a roof system inspection, he can perform repairs at the same time.

Common misconceptions

The first thing you need to do is understand the misconceptions building owners may have regarding roof system inspections. Too often, an owner only considers a leak's direct repair cost and overlooks unseen damage to his building and possible loss of business revenue, as well as possible lawsuits caused by people slipping on wet floors, for example. A leak's cost always is more than the cost of a roof system repair.

Owners also often believe roof system inspections are expensive and unnecessary. According to the Roofing Industry Educational Institute (RIEI), roof system inspections typically will cost about 1 cent to 2 cents per square foot of roof area. An initial inspection may be more expensive if an accurate roof system plan is generated that shows all rooftop equipment and penetrations, as well as any ponded water or repairs. If a roof system plan is made, an initial inspection typically will be 3 cents to 5 cents per square foot.

When to inspect

After deciding whether to conduct an inspection, the next thing an owner may consider is how often roof system inspections should be performed. The industry-recommended schedule is twice per year and after severe weather events. Generally, inspections should be conducted during the spring and fall because you can find problems and repair any damages before and immediately after severe weather occurs. Roof system inspections also can be conducted at other times as needed.

Severe weather includes any storm that has high winds, hail or other elements that could damage a roof system. An inspection after a severe storm does not need to be as thorough as a regular inspection. As an inspector, you should concentrate on a roof's perimeter attachments, all flashings, rooftop equipment that could have had parts blown off, and the roof's field for damage from blowing debris or hail. Despite the benefits of roof system

inspections, not every owner has the resources to inspect roof systems twice per year. In these cases, it is best to urge owners to develop plans that increase inspection frequency on older, problem-prone roof systems. This way a new roof system only may be inspected once per year until problems are found, and older roof systems with problem histories might be inspected twice per year. For roof systems that are not inspected twice per year, I recommend owners have inspections completed before a harsh weather season, such as winter, because roof systems in good condition are more likely to survive harsh weather.

SYNROOF HI-BUILD

Continuous, monolithic waterproof coating which is rugged, resistant & durable.

Reflects more than 90% of the sun's radiation.

"CAN REALLY STRETCH!"

How to do it

It is best to begin an inspection on the ground-not on a roof. By walking around a building and observing its exterior condition, you can get clues as to where to look for rooftop problems. For example, water stains (efflorescence) on masonry walls indicate water is getting into the walls possibly from a roof leak in that area. Also, look for obvious signs of building movement, such as cracked walls, out of alignment walls or damaged roof edges. By noting these problems and their locations, you can concentrate efforts in those areas when inspecting the roof system.

An inspection of a building's interior also is necessary. While conducting an interior inspection, talk to maintenance personnel about previous and current leak locations. Note locations of stained ceiling tiles and walls, and ask building occupants whether the stains are remnants from repaired leaks. Also, try to take a good look at the underside of the roof deck to determine its type and condition. If a roof deck looks badly damaged, you should not walk on the roof until it is determined the deck is safe. Damaged roof deck

areas also indicate a roof system possibly in need of repair.

In addition, knowing the type of roof deck and interior leak locations can help you determine areas where leaks likely are located. For example, water runs downhill in the flutes of a sloped steel deck until it reaches either a lap in the deck panel or another hole in the deck. Therefore, a leak should be up slope no more than the steel deck panel length. Concrete decks, which are monolithic, allow water into buildings at cracks and penetrations, so a leak could be any place up slope.

Once you have determined the locations of all exterior and interior problems, you are ready to go on the roof. You should take a clipboard and paper; copy of the roof plan (if it exists); probing tool (a 4-inch [109-mm], round-point mason trowel works well); screwdrivers with straight and Phillips tips; marking device compatible with the roof membrane type; and camera. Typical marking devices include spray paint for bitumen-based roof systems and lumber crayons or permanent markers for many single plies. It often is convenient to have a trash bag, as well, to pick up light debris from the rooftop during an inspection. Because it is unsafe to climb a ladder with your hands full, put the materials you will need in a backpack.

Once on the roof, try to get an overall impression of the system, such as the surface's appearance and whether the roof system has been maintained. Also note staining from dried ponded areas.

A successful inspection requires you to fully and carefully inspect flashings and penetrations, any rooftop equipment and the roof's field. Flashings and penetrations are the most critical because a vast majority of leaks and problems occur there.

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RIEI recommends you start an inspection in a roof's corner and inspect all perimeter flashings until you return to your starting point. Then, walk the roof's field in a pattern of rows about 5 feet (1.5 m) to 10 feet (3 m) apart. The row spacing will depend on roof system type. For example, it is difficult to see anything but surfacing on a ballasted or gravel-surfaced roof system, so such systems should be inspected every 10 feet (3 m), but a smooth surfaced or exposed roof system should be inspected every 5 feet (1.5 m).

When walking a roof's field, make sure to stop at all penetrations and rooftop equipment. Note that roof systems often are divided into sections that can facilitate inspections. Any naturally occurring obstacle, such as different levels, expansion joints, area dividers, etc., typically divide a roof into sections. Some building owners already may have asset management programs that divide roof systems into sections. If no such plan exists, it is up to an inspector to divide a roof system.

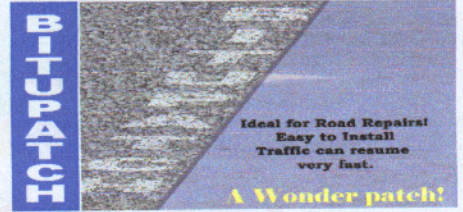
A brief checklist

While conducting an inspection, there are some additional items to be checked. Taking photographs will help you remember what you inspected and why. When taking photographs, note what they depict-unmarked photographs can be difficult to interpret later.

All previous repairs always should be checked to ensure they are intact and not leaking. In addition, any metal membrane interfaces should be checked, and roof drains should be examined to make sure they are not clogged and their clamping ring nuts and bolts are tight.

If flashings are a gravel-stop detail, check for splits in the base flashing at the joints of the gravel-stop metal and for tears and/or disbonding at the metal flashing interface. Additionally, note gravel-stop metal's overall condition. With flashings and details, take extra effort to identify any defects that occur in the areas potentially identified as problem areas during the external building inspection-these defects could be the problems' causes or results.

When inspecting rooftop equipment, open or loose doors or panels should be closed and secured and all seals and expansion joints examined for splits, cracks or leakage. If leaks have been reported under an equipment unit and there are no obvious problems with the unit



or flashings (after a water test), arrangements should be made to have a heating, ventilating and airconditioning contractor examine the unit for problems, such as leaking plumbing and condensation.

When inspecting a roof's field, walk slowly and look side to side to observe any obvious problems with the membrane. Examples of problems to look for include missing ballast or gravel, surfacing or membrane deterioration, and obvious punctures. Spend extra time examining areas where leaks are suspected.

Follow-up

After an inspection, provide an owner with a report of your findings-many owners will not pay for inspections until they receive reports. The report should include the problems found and their locations, recommended corrective actions and repairs, and a cost estimate for repairs. Photographs will help an owner understand a problem's severity but are not necessary.

RIEI has developed a general inspection checklist for all common roof system types to help ensure you have inspected important items. In addition, NRCA offers sample field sheets for built-up, single-ply and spray polyurethane foam roof systems.

A Worthwhile task

To ensure roof systems perform as long as possible, building owners should understand that roof system inspections are not difficult or necessarily time-consuming. Finding a problem before a leak occurs is better and more cost-effective than repairing a leak and addressing leak-related problems.

By: Ted Michelsen, Director - RIEI



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