ASHRAE Qatar Oryx Chapter

NEWSLETTER

APRIL 2012

Newsletter Chair Message

I would like to highlight to everyone why the donation to the ASHRAE Research Program is important, essential and beneficial to all.

As you all know that the ASHRAE Research improves the way HVAC & R systems work, the way in which they are applied and allows development of technical information to create standards and guidelines, which serve as the basis for design, execution, testing and practices around the world.

The ASHRAE standards, guidelines and research papers are available in both soft and hard copies to all individuals and Engineering bodies to refer to them and make use of them for the benefit of their societies.

As you can see the donation pays back very soon in the form of standards and codes, so the donation to the ASHRAE RP is highly recommended and we encourage all members to take part in this program.

Kindly allow me to convey my gratitude to everyone "individuals and companies" who already donated to ASHRAE RP thru Qatar Oryx Chapter this year and would appreciate your continuous support, contributions and cooperation with us in order to achieve "Shaping Tomorrow's, Built Environment Today".

Hassan Sultan
Newsletter Chair
President 2011-2012
ASHRAE Qatar Oryx Chapter

Www.ashrae.org

INSIDE THIS ISSUE:

Chapter Officer:

Hassan Sultan	President
Hani Hawamdeh	Pres.Elect
Seenu Pillai	Secretary
Kinan Fahs	Treasurer
Subrata Kar	V.P.
Hisham Hajaj	V.P.

Board of Governors:
Eugene Baustista
Ghassan Trabolsi
B.Durairajj
Mohamad Mokdad
Fadi AbouJamra
Tony Khoury
Ali Ibrahim
Diwakar Lal

Newsletter Committee:
Hassan Sultan - Chair
Kinan Fahs - Member
Eugene Bautista - Member

ABRAJ AL ARAB TRADING & CONTRACTING SERVICES CO. W.L.L.

TADMUR TRADING W.L.L

GESS
GULF ENGINEERING SYSTEM SOLUTIONS

Gulf Engineering System Solutions
P.O. Box: 648, Doha, Qatar.
Tel. : 44312292, Fax : 44316716 Mob. : 33483001
Email : mjm@gessuae.ae, Web: www.gessuae.ae

SAUTER · Daspass · SODECA · ABB drives · MEKAR · Easyflex · STERILAIRE · AirTree · aqua metro · DRI · EURO AIR · Dwyer · GULF-WAY AUTOMATION · CAREL · ALPHA ACOUSTIKI · Sontay

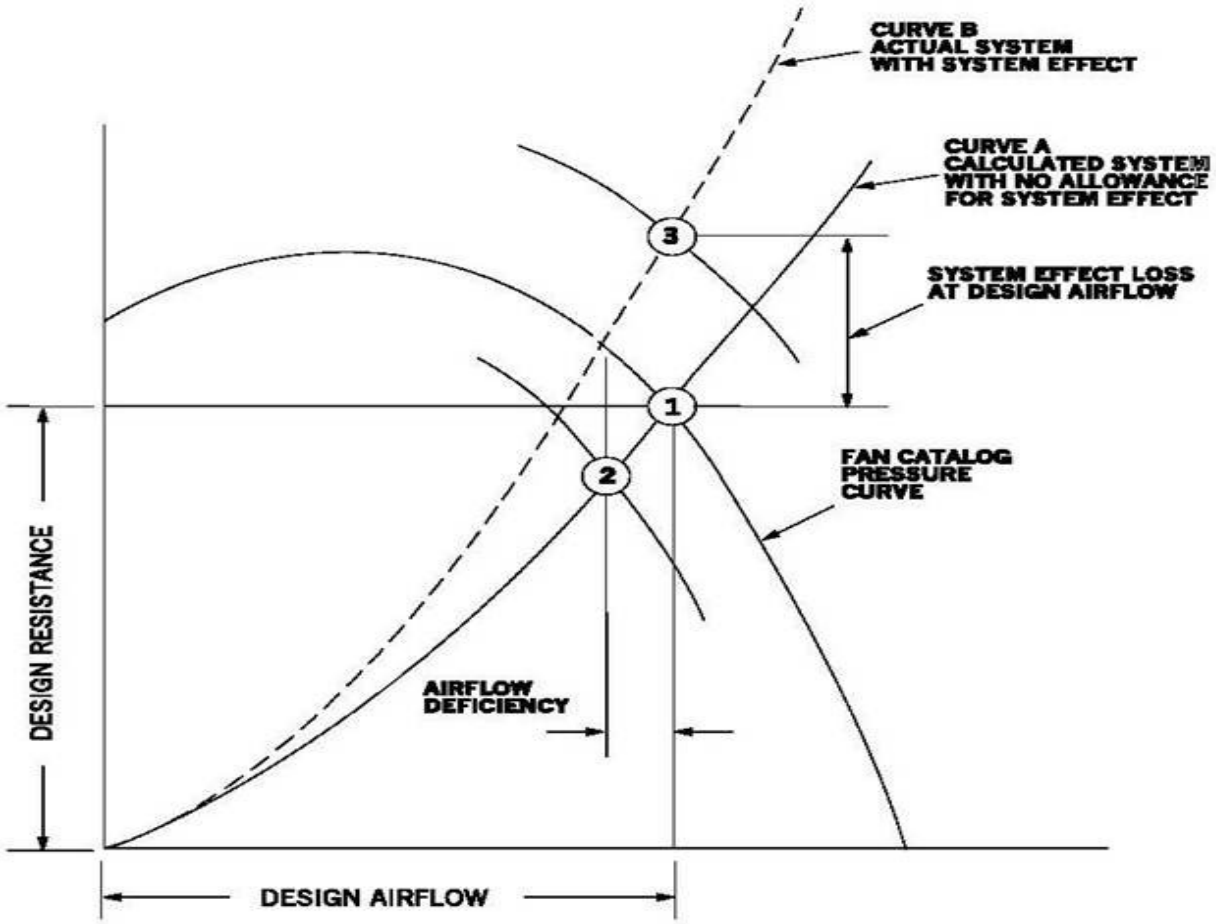
ASHRAE Qatar Oryx Chapter

NEWSLETTER

APRIL 2012

IMPORTANCE OF SYSTEM EFFECT TO DETERMINE FAN CATALOGUE PERFORMANCE

We always encounter deficient fan performance after installation, the first question comes in mind "Proposed fan under sized or wrong Fan rpm" but practically it is just opposite, not always 100% but yes 90% cases are the same. There is a terminology called "System Effect Factor", as per AMCA 201-02, after calculating all ESP, we should always check the system & the fan location, if 100% EDL (Effective duct length) not maintained before & after the fan, we should add system effect factor (SEF) to the calculated system pressure losses to determine the actual system loss, below one graph to show the actual deficiency.



GREEN TECHNOLOGY AND CONT. CO. W.L.L.
P.O. Box : 35204, Doha - Qatar, Tel. : + 974 44478787, Fax : + 974 44478181, C.R. : 41291
Email : greentechdoha@yahoo.com / greentechdoha@gmail.com

ECOTHERM
Heat Transfer Technology
www.ecotherm.com
Solar Heating/cooling, Steam/hot-water boilers, calorifiers, Large/small electric water heaters, Stainless Steel shell-&-tube HX

rosenberg
www.rosenberg-gmbh.com
AHU - Eurovent, VDI, DIN, ATEX Approved. FCU, Fan

evapco
www.evapco.eu
Cooling Towers, evaporative coolers, Ice Thermal Storage

LAKOS
www.lakos.com
centrifugal solid-to-liquid patented filtration system

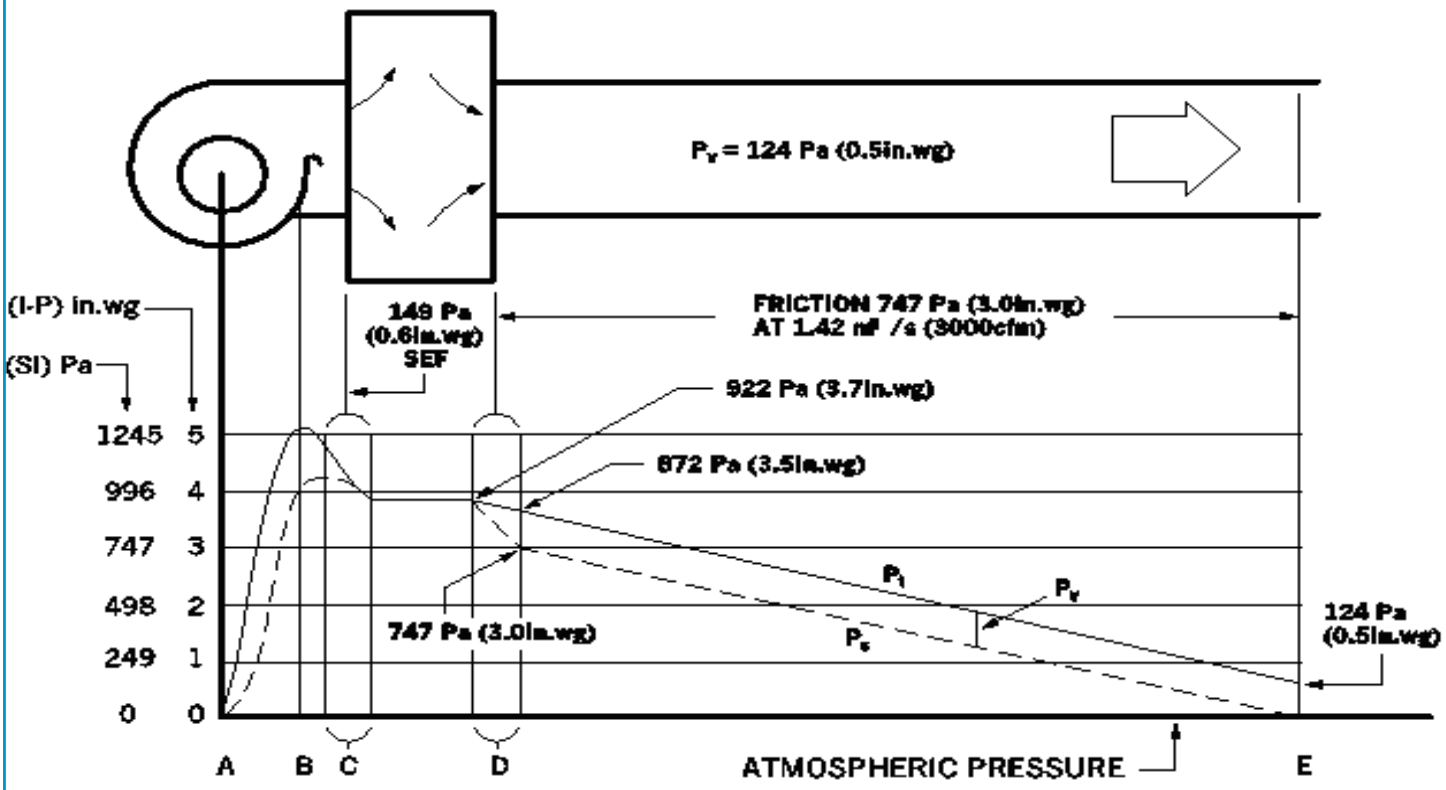
BLUE BOX GROUP
www.blueboxgroup.com
Precision A.C., Air-cooled and Water-cooled Screw Chillers, Roof-top Packaged A.C.Units (all with GREEN Refrigerants)

belven
www.belven.com
Valves-Butter-Fly, Gate,Check,Ball

ASHRAE Qatar Oryx Chapter
NEWSLETTER
APRIL2012

IMPORTANCE OF SYSTEM EFFECT TO DETERMINE FAN CATALOGUE PERFORMANCE

Below one example with a plenum with & without EDL (From AMCA Publication 201-02):

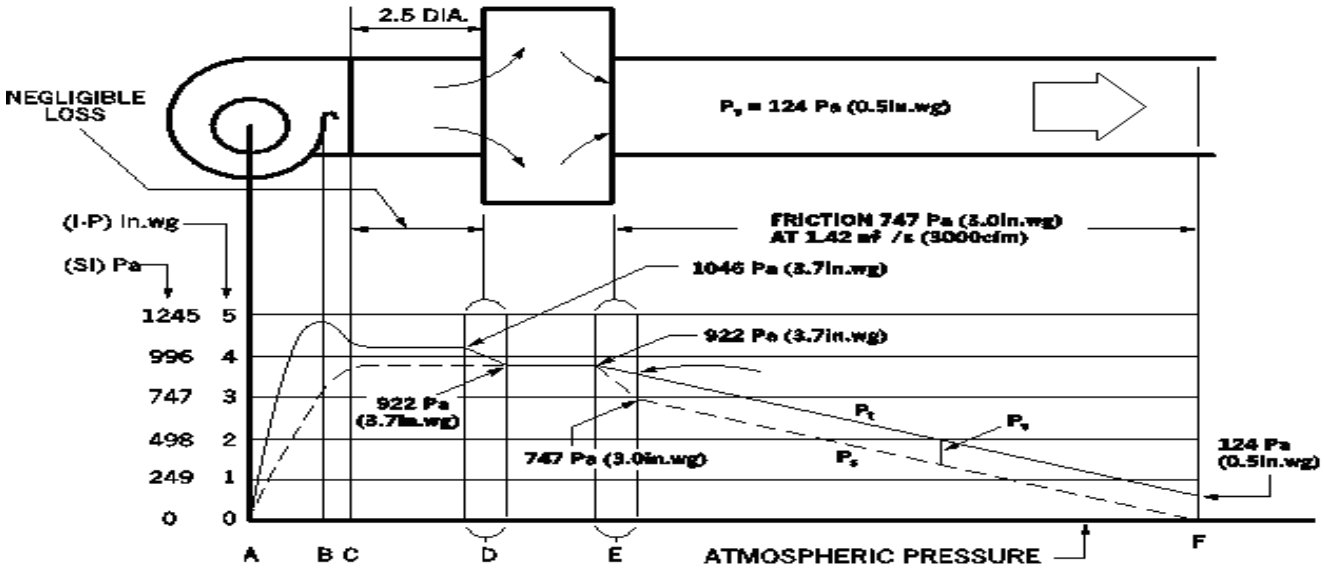


D-E	duct friction at 5000CMH (Q)	747 Pa (duct design)
D	contraction loss-plenum to duct	50 Pa (part of duct system)
D	P_S energy required to create velocity at D	125 Pa (part of duct system)
B-C	**SEF**	**149 Pa**
B-C	P_V loss (also P_T loss) at C as result of air velocity decrease P_S does not change from duct to plenum at C	0 Pa
		----------
REQUIRED Fan P_S		**1071 Pa**

Faisal Jassim Trading Co.
We bring life to your building
TA ITT SONDEX Enventus LAKOS GEA Polacel b.v. Cleaver Brooks euroclima
P.O. Box : 31859 Doha, Qatar. Tel : (+974) 44015777, Fax : (+974) 44015775 www.faisaljassim.ae

ASHRAE Qatar Oryx Chapter
NEWSLETTER
APRIL 2012

IMPORTANCE OF SYSTEM EFFECT TO DETERMINE FAN CATALOGUE PERFORMANCE



E-F	duct friction at 5000CMH (Q)	747 Pa (duct design)
E	contraction loss-plenum to duct	50 Pa (part of duct system)
E	P_S energy required to create velocity at E	125 Pa (part of duct system)
D	P_V loss (also P_T loss) at D as result of air velocity decrease P_S does not change from duct to plenum at D	0 Pa
C-D	outlet duct on fan as tested	0 Pa
REQUIRED Fan P_S		**922 Pa**

So what should be the rule of thumb?

- Minimum 2.5 duct diameters on Outlet
- Minimum 3 to 5 duct diameters on Inlet
- Avoid inlet swirl
- Allow enough space in the building design to allow for appropriate fan connections to the system
- Use allowances in the design calculations when space or other factors dictate less than optimum arrangement of the fan outlet and inlet connections
- Include adequate allowance for the effect of all accessories and appurtenances on the performance of the system and the fan

Mohamad Mokdad
Export Manager
Maico Gulf (Dynair & Elicent)
Board of Governors M.
Ashare-Qatar Oryx Chapter

ASHRAE Qatar Oryx Chapter

NEWSLETTER

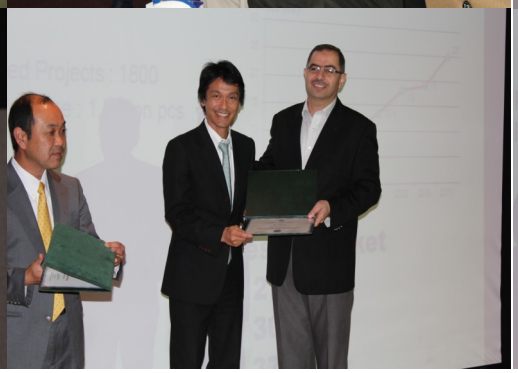
APRIL 2012

ASHRAE SEMINAR

Topic: How to choose your green building piping system for domestic Water?
Presented By: : Mr. Yoshinori lnoue
Sponsored By: M/s Mechanical Engineers & COCOMECH
Date: May 05th, 2012






Dear Members and Non-Members,

Ashrae Qatar Oryx Chapter have successfully conducted 19 Seminars and Events during the year 2011-2012. We the newsletter committee would like you all to allow us to convey our gratitude and thanks to all sponsors and attendees who participated and made the events happened. We look forward to seeing everyone of you again in 2012-2013 events.