



INTERNATIONAL SCHOOL BANGKOK AIR QUALITY MANAGEMENT GUIDELINES

PURPOSE

The care and welfare of all ISB students, faculty and staff is our highest priority. These guidelines have been developed to provide clear action points when the local air goes above acceptable levels.

BACKGROUND

Pollutant Related Health concerns

Air pollution is a growing concern worldwide. Research indicates that exposure to air pollution can impact health. Studies on long-term health effects typically focus on individuals who are exposed to unhealthy air for an extended period, often many years. However, evidence also indicates that short term exposure can create health concerns, particular for children, the elderly, and people with compromised immune systems. Young children are at increased risk of these health effects because they tend to be more physically active, their lungs are still growing, and they are more likely to have asthma or acute respiratory illnesses which can be aggravated when pollution levels are high. ISB routinely monitors particle pollution, specifically Particulate Matter 2.5 (PM2.5). PM2.5 are fine particulates in the air, which can get into the lungs and may even enter the bloodstream.

The Air Quality Index (AQI) was designed by the US Environmental Protection Agency (EPA) and is used to determine air quality. The EPA developed a series of levels (see below) to help the public better understand the impact of air pollution and determine when air pollution reaches unhealthy levels. ISB has aligned our practices with other international schools in China and SE Asia, based on information from the EPA and World Health Organization.

AIR QUALITY GUIDELINES FOR OUTDOOR ACTIVITIES & SPORTS

AQI 0-100

Air quality in this range is considered to be good to moderate and no action is necessary.

AQI 101-150

Air quality in this range is considered unhealthy for sensitive groups. The general public is not likely to be affected. Activities will continue as planned. Those that fall into the “sensitive groups” category will be monitored by teachers and staff. ISB’s medical team will observe visitors to the clinic and report any respiratory issues to the Head of Risk Management.

AQI 151-200

Air quality in this range is considered unhealthy for the general public. Therefore, strenuous activity should be reduced. At this level outdoor activities may be modified to low intensity and/or shorter time periods.

Interscholastic games and competitions may see modifications. - See chart below

AQI 200-299

Air quality in this range is considered to be very unhealthy. At this level all outdoor activities will be held indoors or canceled. Outdoor field trip decisions will be based on the local air quality at destination.

AQI 300-And Beyond

If the AQI exceeds 300, all students and school related personnel (except those necessary to maintain campus security) will remain indoors. This does not restrict students and staff from moving between buildings. Outdoor field trip decisions will be based on the local air quality at destination.

RESOURCES TO DETERMINE CURRENT AQI

How ISB obtains AQI levels:

Readings from the ISB air particulate monitor, located near the 25m pool, will be used to determine the current, actual ISB campus air quality based on PM 2.5.

Link to this system can be found here: [ISB GAMS air monitor](#)

Communicating AQI Protocol

The AQI will be monitored automatically throughout the day by the Monitoring system. If the levels go over our designated thresholds, a notice will be sent to the Safety and Security Team.

- When the AQI is between 151 and 200 an internal email will be sent indicating the AQI and a reminder that PE classes may be modified. Divisional offices will advise PE teachers to avoid prolonged or heavy exercises during outdoor events. The Athletics Office will communicate with coaches.
- If the AQI is > 200 the blue outdoor warning lights will be activated and lightning response protocols will be in effect. ES, MS, and HS Outdoor activities are cancelled or moved indoors.

In regards to after school activities. A determination will be made by 1:00 if events are to be cancelled. If cancelled, an SMS and email will be sent to parents.

This system also measures the current temperature and humidity. These factors are then calculated to determine the heat index. Alerts will also be sent in the same fashion if we reach [ISB heat guideline thresholds](#). The GAMS and Weatherhawk systems will be used together to continually monitor the heat index and weather factors on campus.

ISB Outdoor Activity restrictions based on AQI			
AQI Level	Regular School hours	ES/MS/HS & CAO Practices	Interscholastic games / tournaments
0-100	No modifications	No modifications	No modifications
101-150	Activities may be modified	Activities may be modified	No modifications
151-200	PE/Sports Modified or moved indoors	Reduced exposure, longer breaks, fewer high exertion activities.	Games may continue with modifications.
201- 300	All outdoor activities cancelled		
>301	All students and staff to remain indoors unless moving between buildings. Further safety measures will be taken based on the situation.		

NB: Sensitive groups will be monitored at all times.

Definitions:

Prolonged exposure:

The duration of prolonged exposure is dependent upon individual research studies, but is often a period of several months to several years.

Sensitive groups: Sensitive groups can include young children, elderly, pregnant people, or those with underlying heart and lung disease

Strenuous activity: An activity that increases the heart rate to a level typically associated with cardio training/exercise.

Air Quality Guide for PM2.5 based on the US Environmental Protection Agency
<https://airnow.gov/index.cfm?action=aqibasics.aqi>

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health alert: everyone may experience more serious health effects.
Hazardous	301 to 500	Health warnings of emergency conditions. The entire population is more likely to be affected.

Research links Listed Below:

<https://airnow.gov/index.cfm?action=aqibasics.aqi>

<https://airnow.gov/index.cfm?action=aqibasics.particle>

http://www.who.int/phe/health_topics/outdoorair/en/

<http://www.who.int/mediacentre/factsheets/fs313/en/>https://www.cdc.gov/air/particulate_matter.html

https://www.saschina.org/uploaded/About_SAS/Air_Quality_Guidelines_5-20-16.pdf

<http://www.bcis.cn/en/air-quality>

<https://th.usembassy.gov/message-u-s-citizens-air-quality-northern-thailand/>